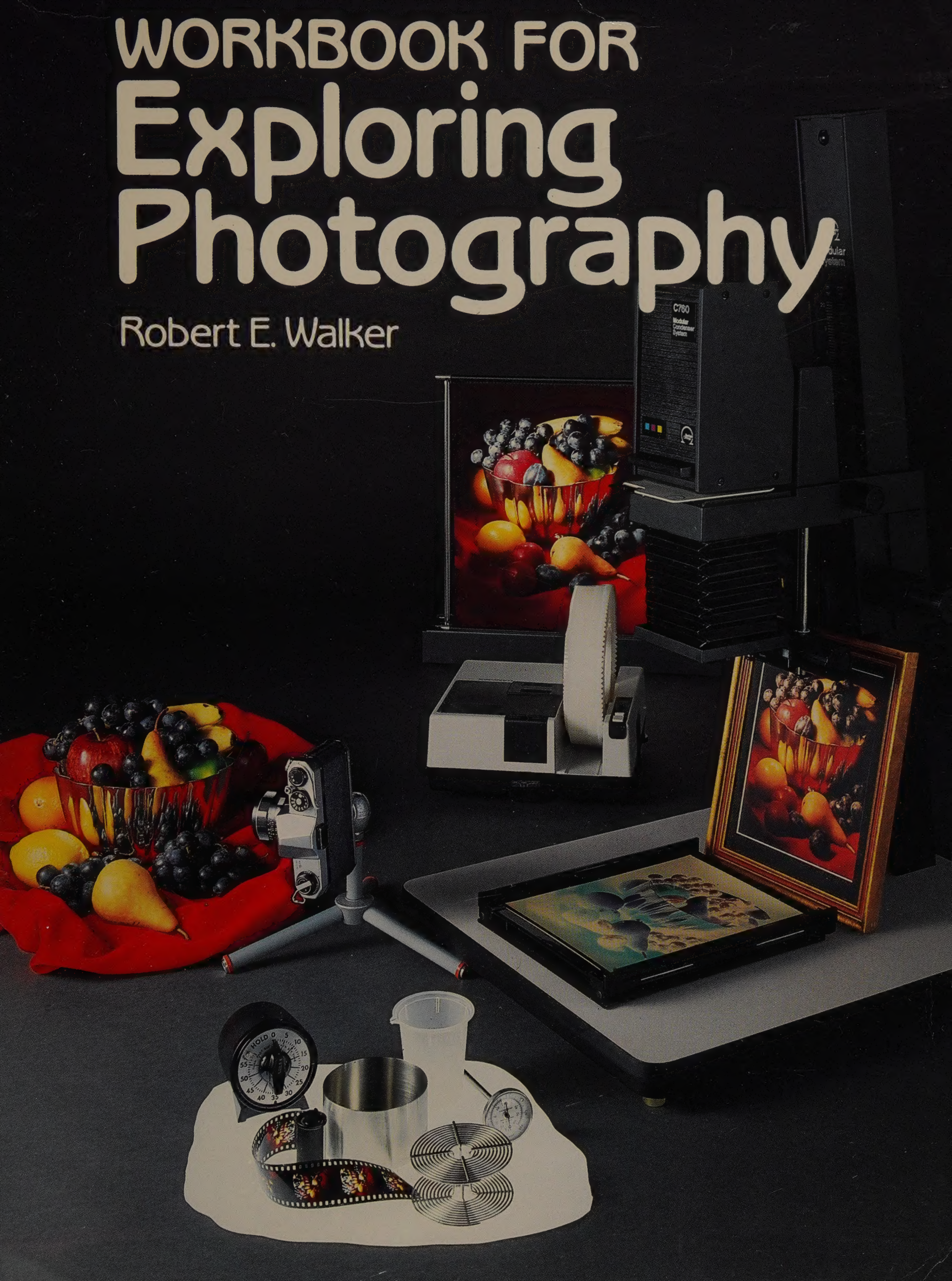
WORKBOOK FOR
Exploring Photography

Robert E. Walker



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WORKBOOK FOR

Exploring Photography

by

ROBERT E. WALKER

South Holland, Illinois

THE GOODHEART-WILLCOX COMPANY, INC.

Publishers

INTRODUCTION

This workbook is designed to help you learn the material presented in the text, *Exploring Photography*. As you do the activities in this workbook, you can review the facts and concepts given in the text. You will also be able to apply these facts and concepts to actual hands-on experiences in photography.

The best way to use this workbook is to begin by reading your assignment in the text. You will find that the activities in the workbook correspond to the units in the text. Follow the instructions carefully at the beginning of each activity.

You will find a variety of activities in this workbook. Some of the activities can be used as study guides as you review in preparation for quizzes and tests. Do your best to complete these activities carefully and accurately. Try to complete as much of each activity as you can without referring to the text. Then compare the answers you have to the information in the text. At that time you can also complete any questions you could not answer. Other activities will let you apply what you have learned through using various photography techniques, making comparisons, and evaluating. The text will be a useful reference in completing these activites.

The activities in this workbook will help you to learn about the fundamentals of photography including photographic equipment, materials, methods, and processes. These activities will also help you to express your creativity and to develop your skills as a photographer.

The last section of this workbook is called "Above and Beyond." The purpose of this section is to take you beyond the textbook. It will allow you to discover other areas related to the study of photography.

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1 HISTORY OF PHOTOGRAPHY

HISTORICAL BACKGROUND

Activity A
Unit 1

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about the history of photography.

1. _____ took several hundred years to reach its present state, and no one person can be credited with its invention. 1. _____

2. The first _____ _____ was a darkened room with a convex lens inserted in one wall. 2. _____

3. A German physicist, _____ _____, discovered a light-sensitive material consisting of chalk and silver dissolved in nitric acid. 3. _____

4. _____ _____, a Frenchman, created the world's first photograph by spreading a light-sensitive varnish on a polished metal plate and exposing it in a modified camera obscura. 4. _____

5. Exposure time for the first photograph was_____ hours. 5. _____

6. In 1835, _____ _____ discovered that a polished silver sheet could be made light-sensitive if exposed to iodine vapor. 6. _____

7. Earliest photographs were printed on metal plates called "_____" after the inventor. 7. _____

8. _____ _____ _____ of England was the first to develop a technique of making a positive print from a negative. 8. _____

9. As lens and camera design and photographic processes improved, _____ *(shorter, longer)* exposures made portrait photography popular. 9. _____

10. Photographers using the _____ _____ process had to take their darkrooms along when they took pictures because the plates had to be exposed and developed while still wet. 10. _____

11. _____ _____ _____ made the first successful dry-plate negative. The plate could be taken almost anywhere so a cumbersome, portable darkroom was no longer needed. 11. _____

12. In 1861, _____ _____ demonstrated the first color photographs. 12. _____

13. An American, _____ _____, introduced a 100-shot camera in 1888 along with the trademark, Kodak. 13. _____

14. Movie film was introduced in 1891 by _____ _____ using the new flexible plastic film. 14. _____

15. Polaroid instant photography, created in 1947 by _____ _____, could produce a black and white print in 60 seconds. 15. _____

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EARLY CAMERA MATCH

Activity B
Unit 1

Name _____
Date _____ Period _____

Match the early types of cameras below with their descriptions.

_____ 1. Daguerreotype camera of the mid 1850s had simple flap arrangement for a shutter.

_____ 2. Portable camera obscura of the 1660s.

_____ 3. The folding pocket camera which remained in use for more than 60 years.

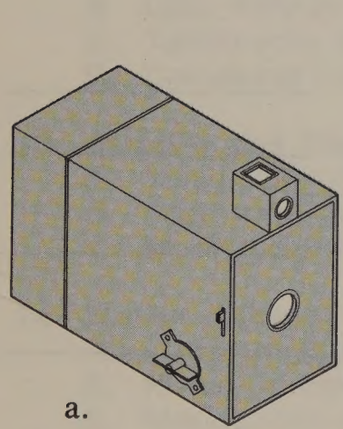
_____ 4. First Kodak Brownie camera brought out in 1900.

_____ 5. Eastman brought out this "pocket camera" in the late 1890s.

_____ 6. Type of camera used by Talbot from 1835 to 1840 which produced a paper negative.

_____ 7. Improved camera used to make Talbotypes. Exposure was made by withdrawing the wooden "shutter."

_____ 8. The Eastman 100-shot box camera of 1888.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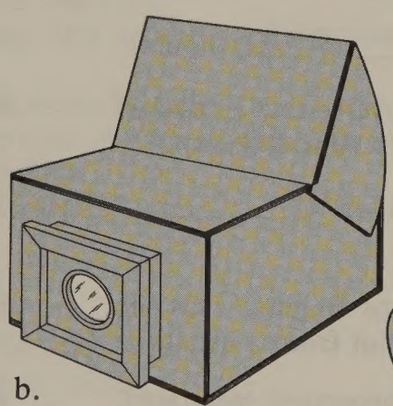
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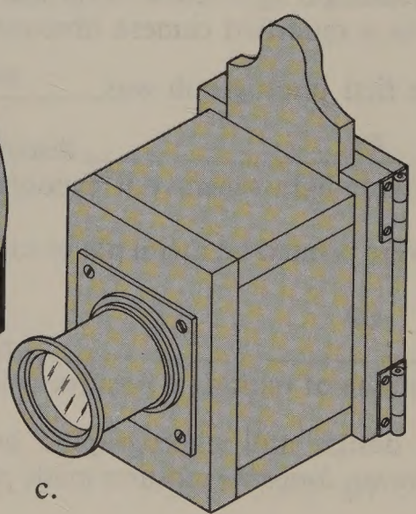
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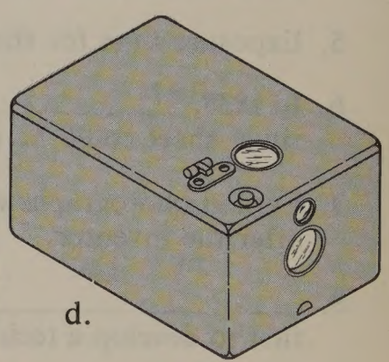
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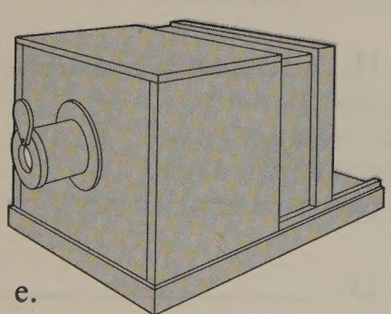
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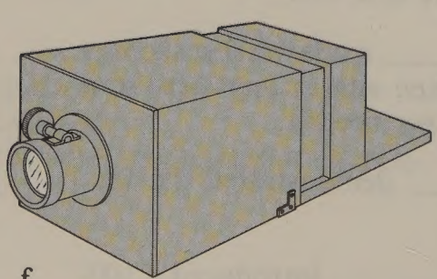
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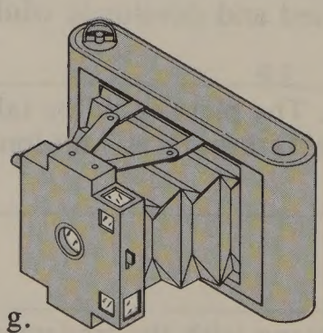
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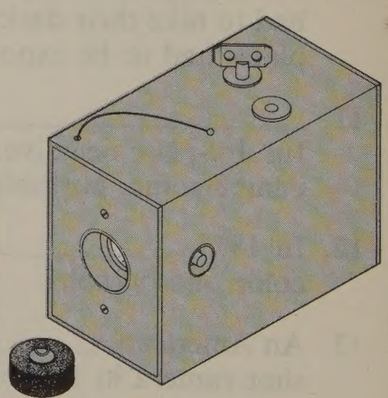
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OLD PHOTOGRAPHS

Activity C
Unit 1

Name _____
Date _____ Period _____

Obtain old photographs and bring them to class, or visit a museum or gallery displaying early photographs. Choose one photograph and describe it in the space below. Try to find out the following information.

Description of photograph: _____

Approximate year photograph was taken: _____

Type of camera (that was most likely) used: _____

Compare this photograph to photographs taken today: _____

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2 CAREERS IN PHOTOGRAPHY

PHOTOGRAPHY CAREER OPPORTUNITIES

Activity A
Unit 2

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about career opportunities in photography.

1. There are many chances to carve out a satisfying _____ in the field of photography. 1. _____
2. _____ photographers make their living taking pictures. 2. _____
3. Many professional photographers learned their craft while serving in a branch of the _____ _____. 3. _____
4. Photographers who work in photographic _____ earn most of their income from portrait work. 4. _____
5. An _____ photographer takes pictures of buildings and building interiors. 5. _____
6. Garment making centers, magazines, clothing retailers, and department stores employ _____ photographers for advertising. 6. _____
7. _____ photographers are expected to work under almost any kind of circumstances covering disasters or public interest stories. 7. _____
8. _____ _____ photographers produce training films, advertising films, educational films, and films for entertainment. 8. _____
9. Photography is used in all _____ fields such as biology, ecology, medicine, and geology. 9. _____
10. _____ _____ agencies use pictures as evidence to solve crimes. 10. _____
11. _____-_____ photographers work for themselves. 11. _____
12. Camera _____ technicians are highly skilled and familiar with complex mechanical, electronic, and optical photographic equipment. 12. _____
13. Photographic retail _____ must be familiar with the products they sell. 13. _____
14. In a _____ lab, technicians process film to the exact needs of the photographer. 14. _____
15. Most film processing is done on _____ machinery operated by skilled workers. 15. _____
16. Most photographic occupations are described in the *Occupational Outlook Handbook* and *Dictionary of Occupational Titles* published by the United States Department of _____. 16. _____

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CAREER LISTING

Activity B
Unit 2

Name _____
Date _____ Period _____

List twelve career areas of photography. Describe these career areas in your own words. Then list photography career opportunities available in your own community.

1. _____ – _____
2. _____ – _____
3. _____ – _____
4. _____ – _____
5. _____ – _____
6. _____ – _____
7. _____ – _____
8. _____ – _____
9. _____ – _____
10. _____ – _____
11. _____ – _____
12. _____ – _____

Photography career opportunities available in your community: _____

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JOB APPLICATION

Activity C
Unit 2

Name _____
Date _____ Period _____

As a prospective employee in search of a job in photography or any other field, you will probably be required to fill out a job application. The following is an example of a standard application. Complete it and let your instructor review it. (Neatness is important!)

APPLICATION FOR EMPLOYMENT

PERSONAL INFORMATION

Date _____ Social Security Number _____

Name _____
Last First Middle

Present Address _____
Street City State

Permanent Address _____
Street City State

Phone No. _____

If related to anyone in our employ, state name and department _____ Referred by _____

EMPLOYMENT DESIRED

Position _____ Date you can start _____ Salary desired _____

Are you employed now? _____ If so may we inquire of your present employer? _____

Ever applied to this company before? _____ Where _____ When _____

EDUCATION

	Name and Location of School	Years Completed	Subjects Studied
Grammar School			
High School			
College			
Trade, Business or Correspondence School			

Subject of special study or research work _____

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What foreign languages do you speak fluently? Read Write

U.S. Military or Naval service Rank Present membership in National Guard or Reserves

Activities other than religious (civic, athletic, fraternal, etc.)

Exclude organizations the name or character of which indicates the race, creed, color or national origin of its members

FORMER EMPLOYERS List below last four employers starting with last one first

Date Month and Year	Name and Address of Employer	Salary	Position	Reason for Leaving
From				
To				
From				
To				
From				
To				
From				
To				

REFERENCES Give below the names of three persons not related to you, whom you have known at least one year

	Name	Address	Business	Years Acquainted
1				
2				
3				

PHYSICAL RECORD

Have you any defects in hearing, vision or speech which might affect your job performance?

In case of emergency notify

Name Address Phone No.

I authorize investigation of all statements contained in this application. I understand that misrepresentation or omission of facts called for is cause for dismissal.

Date Signature

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A PROFESSIONAL PHOTOGRAPHER

Activity D
Unit 2

Name _____
Date _____ Period _____

Interview a professional photographer. Find out the following information.

Name: _____

Type of photographer: _____

Job description (duties performed): _____

_____

_____

_____

_____

_____

Training in photography: _____

_____

_____

Advantages of this job: _____

_____

_____

_____

Disadvantages of this job: _____

_____

_____

_____

Advice to someone considering a career in photography: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

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3 LENSES

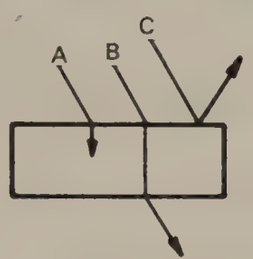
LENS BASICS

Activity A
Unit 3

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about lenses.

1. Light rays can be transmitted, absorbed, and reflected. Identify these light rays.



1. A. _____
   B. _____
   C. _____

2. A positive or _____ lens is thicker at the center and gathers light. In the space below, draw this type of lens.

2. _____

3. A negative or _____ lens is thicker at the edges and spreads light. In the space below, draw this type of lens.

3. _____

4. Plastic lenses are used mainly in _____ *(expensive, inexpensive)* cameras.

4. _____

5. A lens is made from a design or formula consisting of all the following factors *except:*
   a. Type of glass.
   b. Curvature.
   c. Cost.
   d. Placement and spacing of the elements.

5. _____

(Continued)

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6. The distance between the lens and the point where the photographic subject (located at infinity) is in sharp focus on the film is known as the _____ _____. 6. _____

7. The film surface is called the _____ _____. 7. _____

8. A _____ *(shorter, longer)* focal length will increase the size of a subject, but will narrow the angle of view. 8. _____

9. A _____ *(shorter, longer)* focal length will decrease the size of a subject produced on the film and will expand the angle of view. 9. _____

10. The lens _____ controls the amount of light that can pass through the lens to the film. 10. _____

11. Aperture _____ is specified by f-stops. 11. _____

12. A large aperture opening will admit _____ *(more, less)* light than a small aperture opening. 12. _____

13. Which aperture setting allows the greatest amount of light to pass through the lens to the film? 13. _____

f/4 f/1.4 f/11 f/5.6

14. A _____ *(slow, fast)* lens allows a great amount of light to pass through to the film and permits satisfactory photographs to be taken in dim light. 14. _____

15. Reducing the size of the lens aperture is called _____ _____. 15. _____

16. List four types of lens mounts. 16. _____ _____ _____ _____

17. Adjustable lenses usually have three scales printed on them: The ___(A)___ scale tells the operator how far away the subject is located. The ___(B)___ scale indicates the nearest and farthest distances the subjects in the picture are in sharp focus. The ___(C)___ scale indicates the f-stop at which the aperture is set. 17. A. _____ B. _____ C. _____

18. A wide angle lens has a ___(A)___ *(longer, shorter)* focal length than a normal lens. At any distance it will take in ___(B)___ *(more, less)* area than the normal lens. 18. A. _____ B. _____

19. _____ _____ lenses are used to photograph landscapes, buildings, and groups of people. 19. _____

20. _____ lenses are used for nature photography, sports photography, and for taking candid photographs. 20. _____

21. A _____ lens is like many different lenses in one. 21. _____

22. When not in use, both ends of the lens should be protected with _____ _____. 22. _____

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MAKING A PINHOLE CAMERA

Activity B
Unit 3

Name _____
Date _____ Period _____

Construct and use a pinhole camera according to the directions given below.

Materials:

- Cardboard
- X-acto knife
- Flat black spray paint
- Balsa wood (3/16 in. thick)
- Glue
- Black tape
- Heavy aluminum foil
- #10 sewing needle
- 2 rubber bands
- 126 cartridge of black and white film

Procedure:

1. Cut a piece of cardboard to 1 1/4 x 5 3/4 in. Mark off four equal sections. Using an X-acto knife, cut halfway through the cardboard on each fold line, Fig. 3-1. (This will make the cardboard easier to fold.)

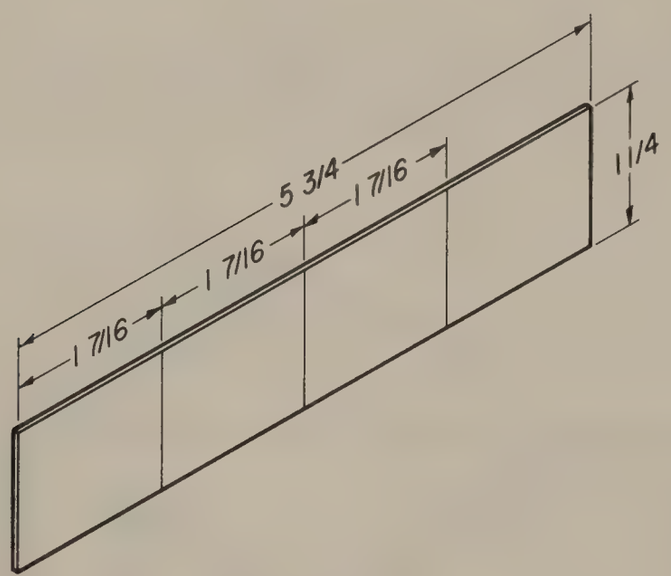

Fig. 3-1

2. Cut a piece of 3/16 in. thick balsa wood to the pictured dimensions, Fig. 3-2.

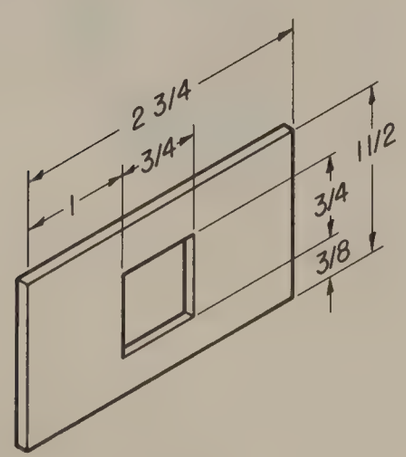

Fig. 3-2

3. Paint both sides of the cardboard and balsa wood with flat black spray paint. Allow to dry.

(Continued)

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4. Fold cardboard on each fold line. Join the ends with glue and black tape, Fig. 3-3.

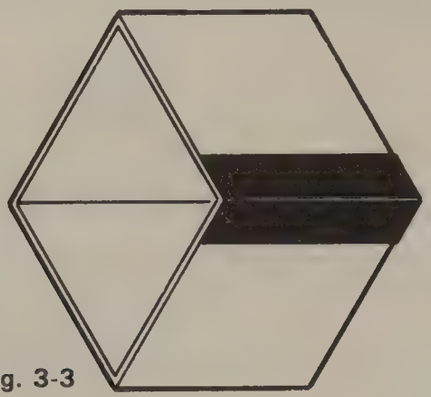

Fig. 3-3

5. Cut a piece of heavy aluminum foil to a 1 in. square. Rest the foil square on a hard, flat, protective surface (such as cardboard). Using only the point of a needle, make a tiny pinhole in the very center of the aluminum square, Fig. 3-4. Caution: If the hole is too large, your photographs will be blurred. The smaller the hole is, the sharper your photographs will be.

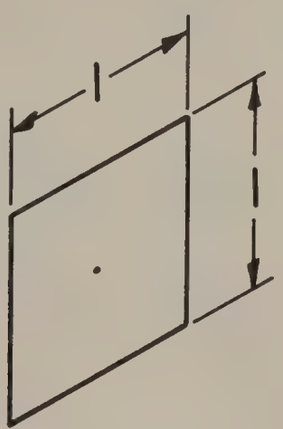

Fig. 3-4

6. Center the pinhole in the foil over the balsa wood cutout. Tape the foil to the balsa wood, Fig. 3-5.

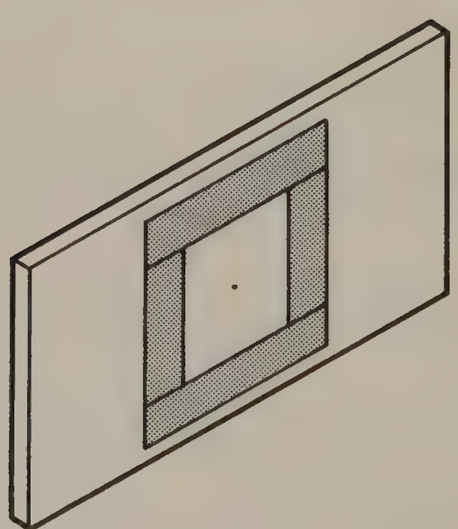

Fig. 3-5

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7. Tape the pinhole assembly to the cardboard square. Make sure that the fit is tight so that light will not leak inside the camera, Fig. 3-6.

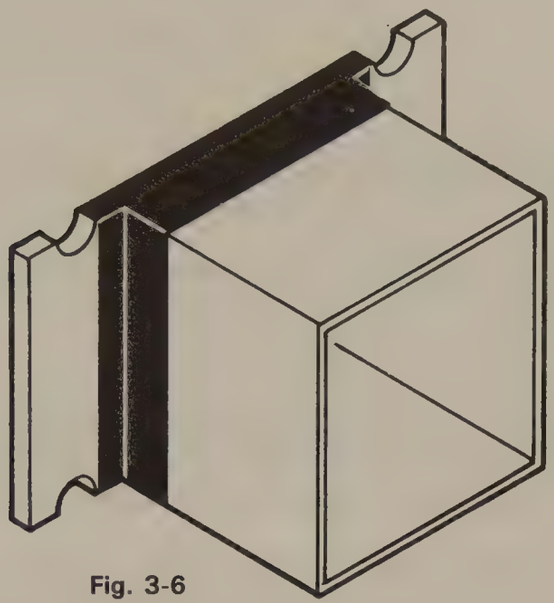

Fig. 3-6

8. On the outside of the camera, place a 1 in. square of cardboard over the pinhole. Tape it along the edge. Use a small piece of tape to hold it down. Using two rubber bands, fit the camera against the square opening of the film cartridge. The finished product is shown in Fig. 3-7.

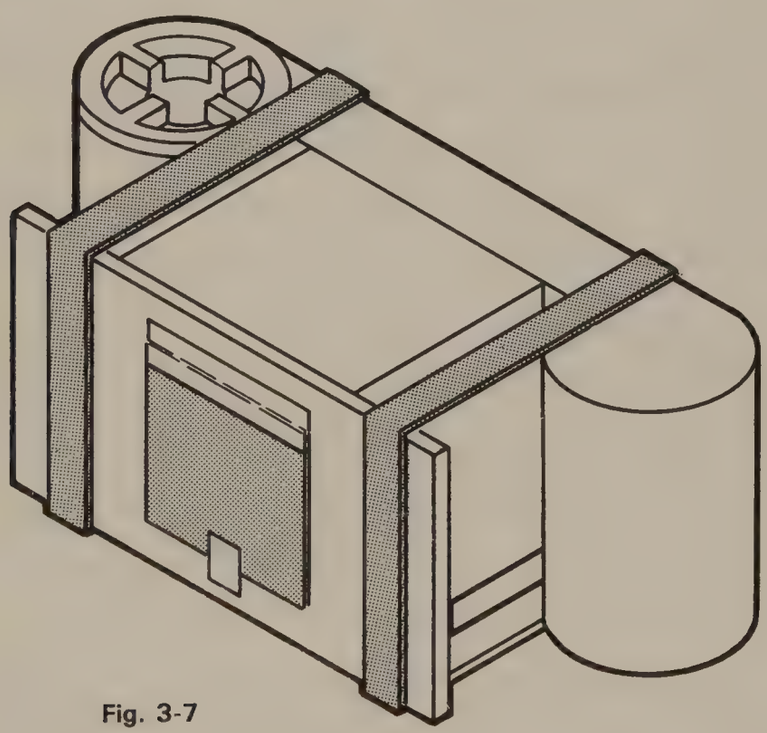

Fig. 3-7

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USING A PINHOLE CAMERA

Activity C
Unit 3

Name _____
Date _____ Period _____

Photograph a subject using a pinhole camera.

Materials:
The pinhole camera constructed in Activity B or a commercially made pinhole camera and a 126 cartridge of black and white film.

Procedure:
1. Use your finger or a coin to advance the film turning counterclockwise. The yellow paper, visible through the back window, should move. Turn until the third or fourth number of each series shows in the window.
2. Tape or fasten the camera to a stationary object such as a table, rock, fence, etc. (The camera must be perfectly still during exposure.)
3. Take a series of photographs of an outdoor object in daylight. Expose the film by lifting the cardboard flap (described in step 8 of Activity B) for the recommended exposure time. A recommended series of exposure times (one time for each photograph) is: 1/2 second, 1 second, 2 seconds, 4 seconds, 8 seconds, 16 seconds, 32 seconds, 60 seconds.
4. Have the film commercially processed, or your instructor can assist you in developing the roll yourself.
5. Attach your two best exposures below and provide the exposure information requested.

PLACE NEGATIVE HERE

PLACE NEGATIVE HERE

Date taken: _____
Time of day: _____
Exposure time: _____
Light quality (circle one)
bright sunlight, partly cloudy,
overcast

Date taken: _____
Time of day: _____
Exposure time: _____
Light quality (circle one)
bright sunlight, partly cloudy,
overcast

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COMPARING LENSES

Activity D
Unit 3

Name _____
Date _____ Period _____

Visit a camera store or a department store that sells cameras. Look at the lenses available. List and describe different types of lenses by completing the chart below.

Lens (Include brand)	Description	Type of mount	Price	Use

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4 THE CAMERA

CAMERAS AND THEIR PARTS

Activity A
Unit 4

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about cameras and their parts.

1. A _____ is a light-tight box made to expose light-sensitive material (film). 1. _____

2. A _____ is a device something like a window blind that controls the length of exposure. 2. _____

3. When the shutter is opened, _____ passes through the lens and focuses on the film. 3. _____

4. The _____ controls the amount of light admitted into the camera. 4. _____

5. The diaphragm, also called an _____ (opening), is usually found between the lens elements. 5. _____

6. The _____ controls the direction of the light coming into the camera. 6. _____

7. Name the two basic types of shutters. 7. _____
_____

8. Which shutter speed would you use to stop the action of a runner? 8. _____
1 second 1/8 second 1/500 second

9. Shutter speeds of _____ second or faster are needed when the camera is hand held using a normal lens. 9. _____

10. The photographer uses the _____ to aim and compose the picture. 10. _____

11. The _____ _____ opens the shutter and exposes the film. 11. _____

12. In which of the following camera modes of operation is the lens aperture and shutter speed set by hand: 12. _____
a. Automatic.
b. Manual.
c. Automatic focusing.

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13. In automatic programmed systems, the camera selects both shutter speed and aperture opening. *(True or False)* 13. _____

14. List the five basic types of cameras. 14. _____

_____

_____

_____

_____

15. To use a _____ camera, you just aim and shoot. 15. _____

16. The _____ camera uses a viewfinder combined with a focusing device called a rangefinder. 16. _____

17. _____ error means that the viewfinder sees the subject from a slightly different position than the lens. 17. _____

18. The _____ _____ _____ camera has a two-section body fitted with a pair of matched lenses. Composing and focusing are done with the top lens. The bottom lens takes the picture. 18. _____

19. The _____ _____ _____ camera uses the same lens for viewing, focusing, and taking the picture. 19. _____

20. Single lens reflex cameras are made in several _____. The most popular is the 35 mm. 20. _____

21. _____ cameras are used when large format negatives are needed. Because of its size, it must always be mounted on a tripod. 21. _____

22. The main advantage of a _____ camera is its ability to take medium and large format pictures in fast-moving situations. 22. _____

23. The _____ camera is designed for wet environments. 23. _____

24. The Sony Mavica electronic camera is the first SLR _____ camera. 24. _____

25. The _____ camera is named for its unusual film cartridge. 25. _____

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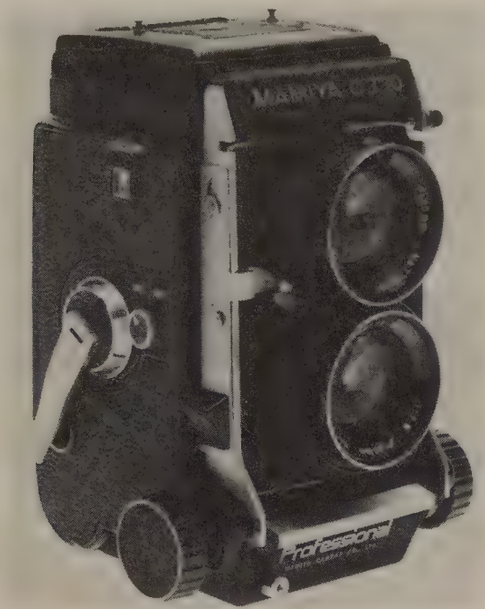
TYPES OF CAMERAS

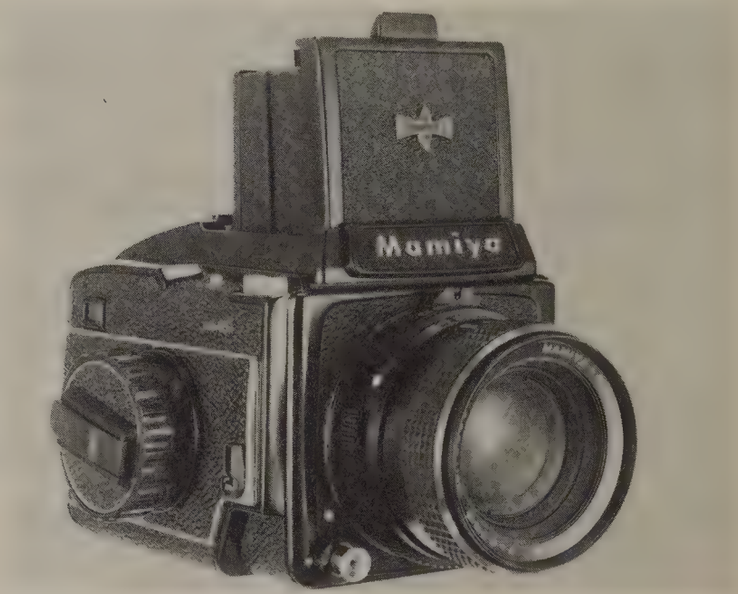
Activity B
Unit 4

Name _____
Date _____ Period _____

Identify the following cameras according to type.

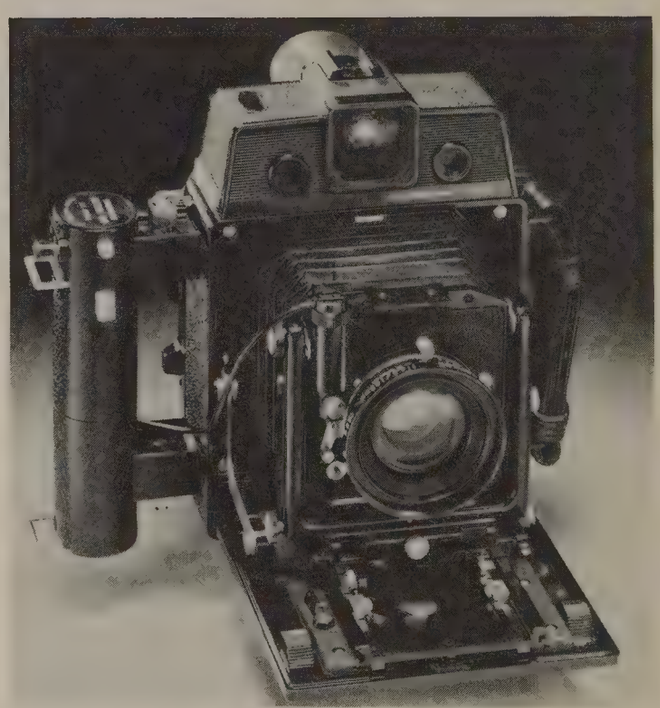


1. _____



2. _____

3. _____



4. _____

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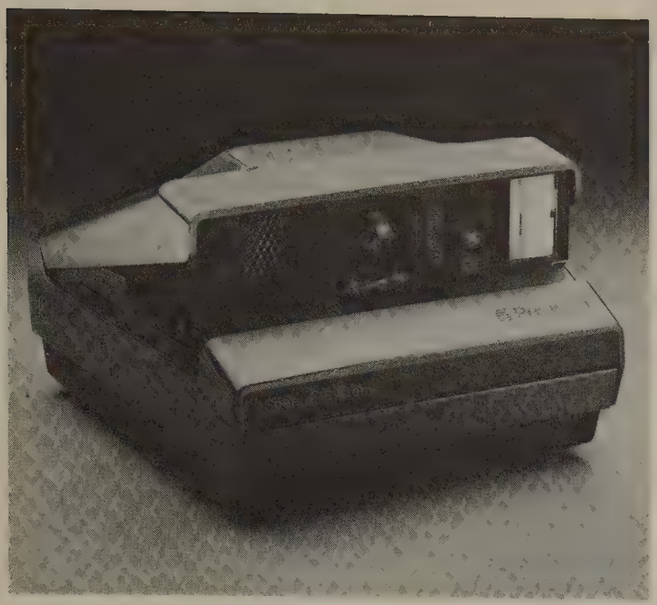
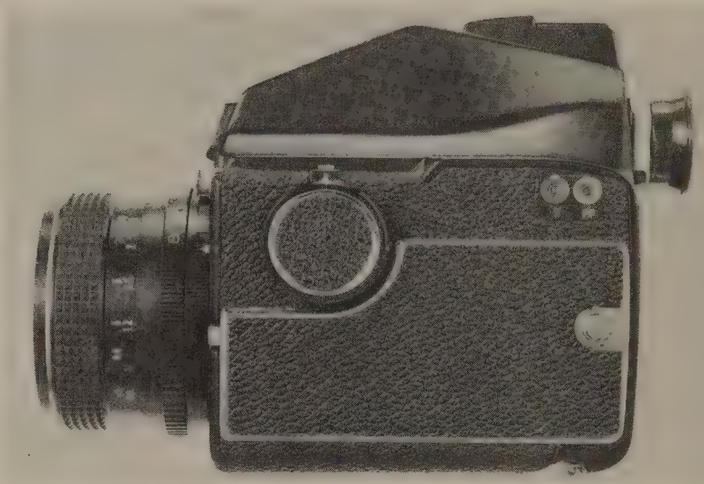


5. _____

6. _____

7. _____



8. _____

9. _____

10. _____

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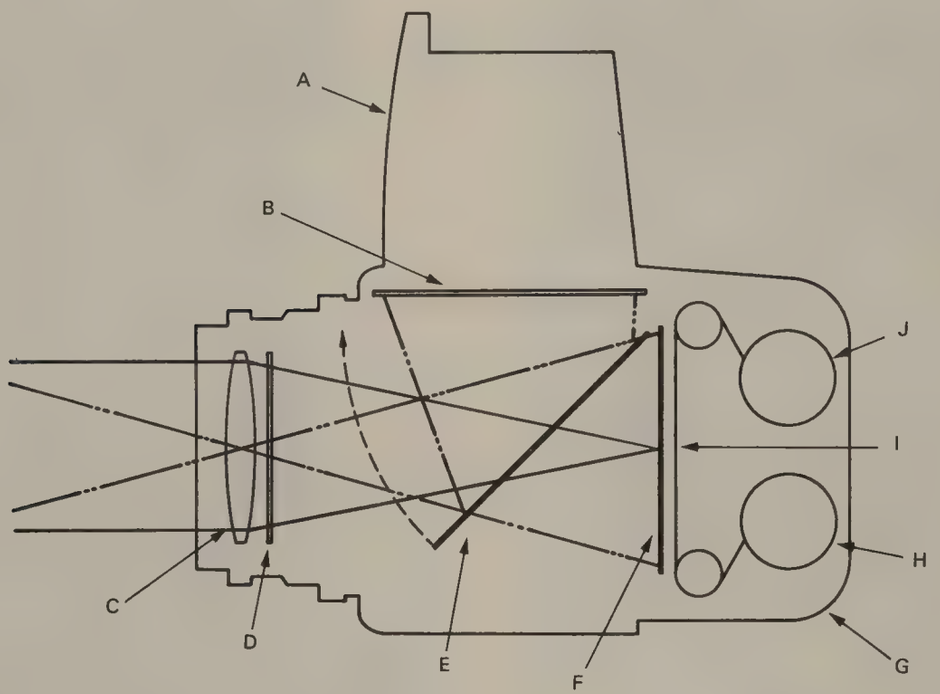
BASIC CAMERA PARTS IDENTIFICATION

Activity C
Unit 4

Name _____
Date _____ Period _____

Identify the basic parts of the camera indicated below.



A. _____ F. _____

B. _____ G. _____

C. _____ H. _____

D. _____ I. _____

E. _____ J. _____

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YOUR CAMERA

Activity D
Unit 4

Name _____
Date _____ Period _____

Make a sketch of your camera (or the camera you will be using for this course). Label as many parts as possible. Then fill in the following information about the camera.

Sketch:

Camera type: _____

Camera brand and model: _____

Shutter type: _____

Shutter speed range: _____

Mode of operation: _____

Format: _____

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SELECTING AND BUYING A CAMERA

Activity E
Unit 4

Name _____
Date _____ Period _____

Pretend that you are interested in buying a camera. Interview a person who works in a camera store or someone who knows about cameras. Then in the space below, write an article explaining how to select and buy a camera.

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CAMERA COMPARISONS

Activity F
Unit 4

Name _____
Date _____ Period _____

Visit a local camera store or the camera section of a department store. Complete the following chart.

Camera (brand and model)	Type	Mode of operation	Shutter type and speed range	Format	Cost

Comments: _____

_____

If you were buying a camera, which of the above would you choose? Explain why. _____

_____

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5 BLACK AND WHITE FILM

FILM FACTS

Activity A
Unit 5

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about black and white film.

1. Photographic film is a thin sheet or strip of flexible plastic coated with a light-sensitive material called an _____. 1. _____

2. A transparency is a _____ *(positive, negative)* image made on film. 2. _____

3. Film _____ refers to the dimensions to which film has been cut or to the size of the negative. 3. _____

4. A 6 x 7 cm film fits a camera which produces a negative of which size? 4. _____
   10.2 x 12.7 cm 6 x 7 cm 6 cm square

5. List the three basic modes in which films are packaged. 5. _____
   _____
   _____

6. Bulk film should only be purchased if it is to be used within a year. *(True or False)* 6. _____

7. _____ *(Roll, Cartridge)* type cameras are easy to load because no film threading is required. 7. _____

8. Sheet film is used primarily in _____ *(large, small)* format cameras. 8. _____

9. _____ films will reproduce colors on a print as gray tones having the same degree of brightness as they appear to the human eye. 9. _____

10. The mottled or sandlike effect that appears when a negative is enlarged is called _____. 10. _____

11. As a general rule, image sharpness improves as graininess _____ *(increases, decreases)*. 11. _____

12. Film speed is a measure of a film's sensitivity to _____. 12. _____

13. A _____ *(fast, slow)* film would be useful to photograph dimly lit subjects, rapidly moving subjects, or when good depth of field is desired. 13. _____

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14. A _____ *(fast, slow)* film would be useful in photographing bright scenes or long exposures. 14. _____

15. _____ is the ability of a film to record fine details. 15. _____

16. List the five layers of film. 16. _____

_____

_____

_____

_____

17. Film reacts when light strikes some of the tiny _____ halide crystals during exposure. 17. _____

18. A light subject reflects a great amount of light back to the film and produces a _____ *(light, dark)* area on the negative. 18. _____

19. A _____ *(high, moderate, low)* density is preferred in a negative. 19. _____

20. _____ is the difference in the densities of various areas of a negative. 20. _____

21. Exposure _____ of a film is the amount of overexposure or underexposure a film can stand and still produce an acceptable image. 21. _____

22. Using the same film, a camera set to 1/500 second and f/5.6 would give the same exposure value as a camera set to 1/60 second and _____. 22. _____

f/8 f/11 f/16

23. A film with an ISO/ASA of 400 is _____ *(half, twice)* as fast as a film with an ISO/ASA of 200. 23. _____

24. _____ film allows you to take photos under greatly different lighting conditions. 24. _____

25. _____ film consists of both a positive receiving paper and a negative sheet. 25. _____

26. _____ film makes a positive black and white transparency. 26. _____

27. _____ film is used to photograph line drawings and printed material. 27. _____

28. _____ film is often used to photograph objects in darkness with special lighting equipment. 28. _____

29. Unprocessed film can be damaged by: 29. _____
    a. High humidity.
    b. High temperatures.
    c. Light.
    d. All of the above.

30. If refrigerated at 55°F (13°C) or lower, _____ can be stored for long periods of time. 30. _____

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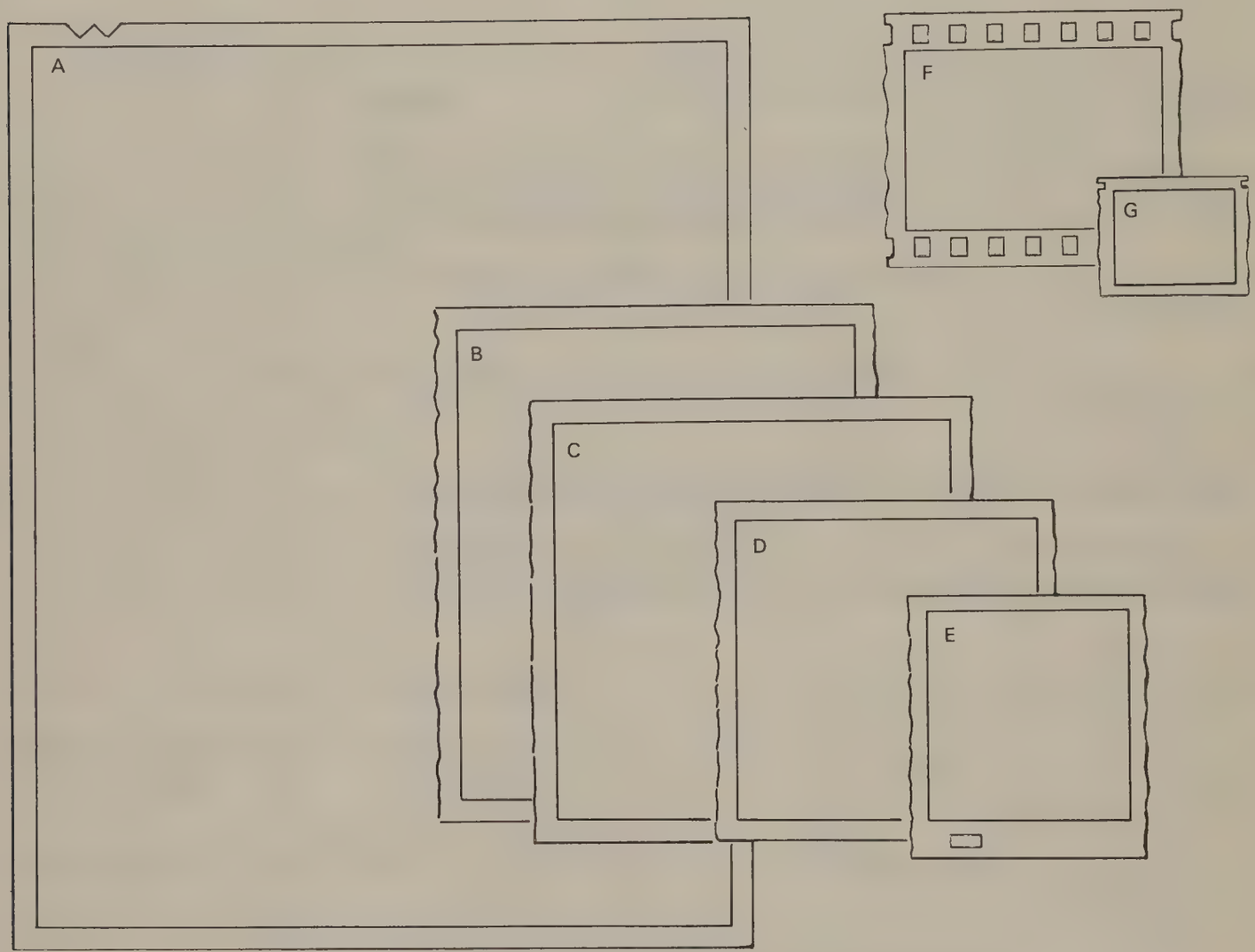
FILM SIZES

Activity B
Unit 5

Name _____
Date _____ Period _____

Label the sizes of the films below.



A. _____ E. _____

B. _____ F. _____

C. _____ G. _____

D. _____

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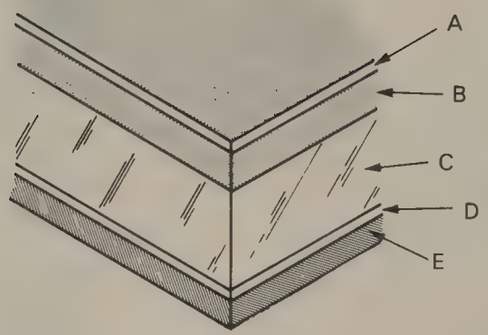
HOW BLACK AND WHITE FILM IS MADE

Activity C
Unit 5

Name _____
Date _____ Period _____

Label the following layers of film. Then describe the purpose of each layer in your own words.



A. _____ – _____

_____

_____

B. _____ – _____

_____

_____

C. _____ – _____

_____

_____

D. _____ – _____

_____

_____

E. _____ – _____

_____

_____

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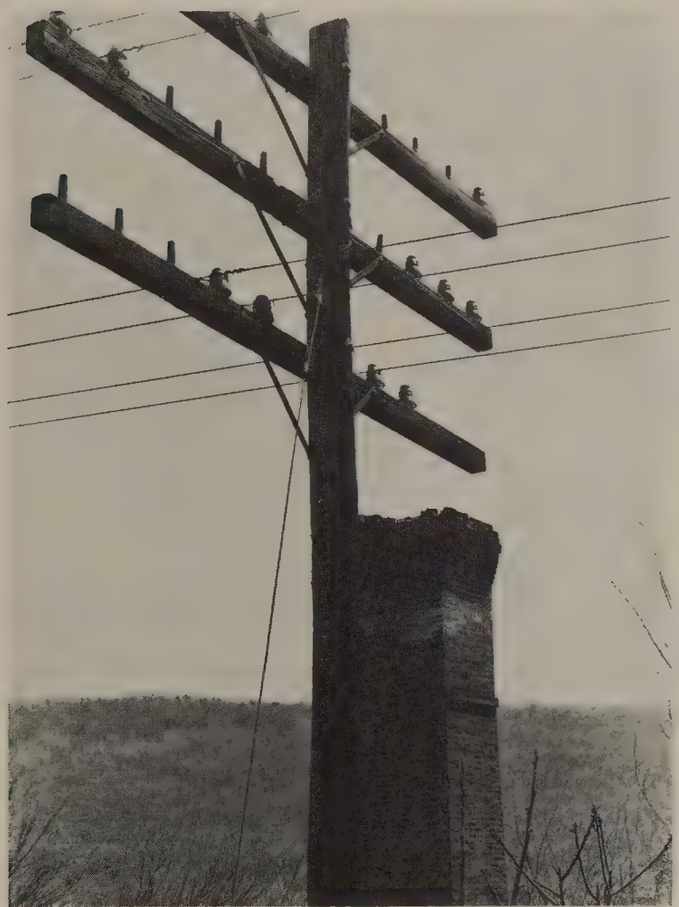
CONTRAST

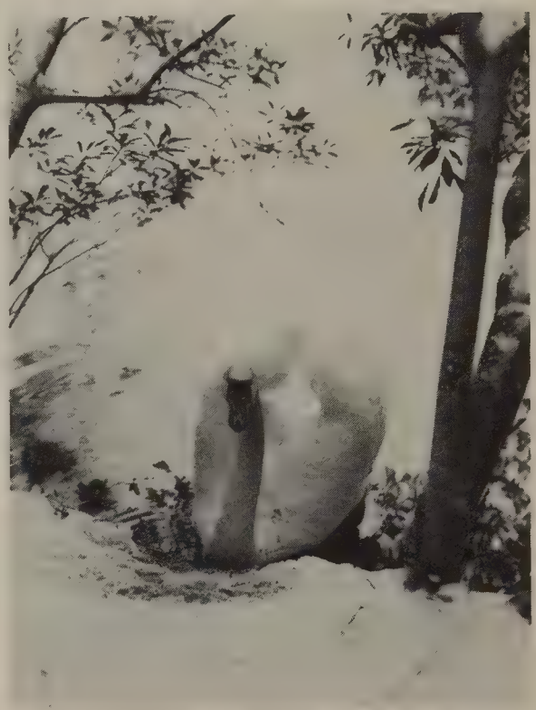
Activity D
Unit 5

Name _____
Date _____ Period _____

Label each of the prints below as examples of either *low contrast* or *high contrast.*



1. _____



2. _____

3. _____

4. _____

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EXPOSURE LATITUDE

Activity E
Unit 5

Name _____
Date _____ Period _____

Demonstrate the exposure latitude of a film. Shoot a roll of black and white film of the same subject in daylight following these directions: Pick an aperture setting (for example, f/8), and vary the shutter speeds starting with the lowest shutter speed on your camera. Have the film developed. Make a contact print (actual-size print of the negatives). Attach the contact print to this page. Class members may wish to use different types of film to compare the exposure latitude of various films. Compare your results with others in the class.

Aperture setting: f/_____

Shutter speed	Description of contact print from negative

Place a check next to to the shutter speeds that you think are capable of producing an acceptable print. Explain how this activity helps you to determine the exposure latitude a film can stand and still produce an acceptable image. _____

_____

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SHOPPING FOR BLACK AND WHITE FILM

Activity F
Unit 5

Name _____
Date _____ Period _____

Visit a local camera store or the camera section of a department store. List and compare the variety of black and white films available.

Film brand	ISO/ASA rating	Characteristics of film	Cost

Look at a package of black and white film. List the following information about the film:

Brand: _____

ISO/ASA rating: _____

Expiration date: _____

Size: _____

Number of exposures: _____

Other information on package: _____

_____

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6 HOW TO USE A CAMERA

CAMERA KNOW-HOW

Activity A
Unit 6

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about using a camera.

1. When loading a camera, the emulsion side (dull surface) of the film is always _____ *(away from, toward)* the shutter. 1. _____

2. Blurred or "fuzzy" pictures will result from camera movement or vibration. *(True or False)* 2. _____

3. Telephoto and close-up lenses emphasize camera _____. 3. _____

4. For sharp photos when hand holding the camera, a good rule of thumb is to use a shutter speed equal to the inverse (turned upside-down) of the lens' focal length. This means that a camera with a 250 mm lens should not be hand held at less then _____ second. 4. _____

5. A camera should be supported by a _____ when there is not enough light to use at least a 1/30 second shutter speed or for close-up photography. 5. _____

6. The shutter release should be depressed in a _____ *(smooth, quick "jab")* motion for sharp photos. 6. _____

7. Proper focusing is required for sharp pictures. *(True or False)* 7. _____

8. Many focusing screens have built-in focusing aids. List the two basic types of aids. 8. _____
_____

9. You can focus SLR, TLR, and rangefinder cameras by estimating the _____-_____-_____ distance. 9. _____

10. The distance between the nearest and farthest object in a scene that appears in acceptably sharp focus is the _____ _____ _____. 10. _____

11. The _____ *(shorter, longer)* the focal length is, the greater the depth of field will be. 11. _____

12. Depth of field is increased as the lens aperture becomes _____ *(smaller, larger)*. 12. _____

13. Depth of field _____ *(decreases, increases)* the farther away the subject is from the camera. 13. _____

(Continued)

14. A _____ _____ is used to measure the amount of light that reaches the film. 14. _____

15. If you have no light meter, you can determine the proper exposure settings by:
    a. Asking a friend.
    b. Guessing.
    c. Following suggestions on the film data sheet.
    d. None of the above. 15. _____

16. _____ *(Reflected, Incident)* light meters are pointed at the subject from the same direction as the camera. 16. _____

17. _____ *(Reflected, Incident)* light meters must be held near the subject and pointed at either the camera or light source. 17. _____

18. To avoid guessing at the proper meter setting when extremes in light reflectivity occur, an 18 percent _____ _____ can be used. 18. _____

19. The camera-to-subject position is called the _____ _____. 19. _____

20. Moving the camera to follow a subject that is also moving is called _____. 20. _____

21. The technique of partially or totally surrounding the primary subject with an object or objects in the foreground is called _____. 21. _____

22. When taking pictures, to avoid such things as a tree "growing" out of the subject's head, use a _____ that is uncluttered. 22. _____

23. _____ focusing can be used to direct attention to the subject. 23. _____

24. An interesting photograph should have a _____ _____ _____. 24. _____

25. _____ between the camera and the subject can usually be eliminated by careful placement of the camera, changing the camera angle, moving closer to the subject, or using a wide angle lens. 25. _____

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HOW TO USE YOUR CAMERA

Activity B
Unit 6

Name _____
Date _____ Period _____

Write an instruction sheet on how to use your camera. Include directions for the following procedures.

Loading the film: _____

Removing the film: _____

Holding the camera: _____

Using the shutter release: _____

Focusing the camera: _____

Metering: _____

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HOLDING A CAMERA STEADY

Activity C
Unit 6

Name _____
Date _____ Period _____

Take a series of photographs using a slow shutter speed (more than 1/30 second, such as 1/15 second or 1/8 second). Hand hold the camera for half of the photos and use a tripod to support the camera for the others. (If a tripod is not available, a table, chair, or fence may be used.) Process the film. Mount examples of your photographs below. Shutter speed for photographs: _____

Photograph taken with hand held camera.

Photograph taken with camera supported.

Evaluate the difference between these two photographs. _____

_____

_____

_____

_____

_____

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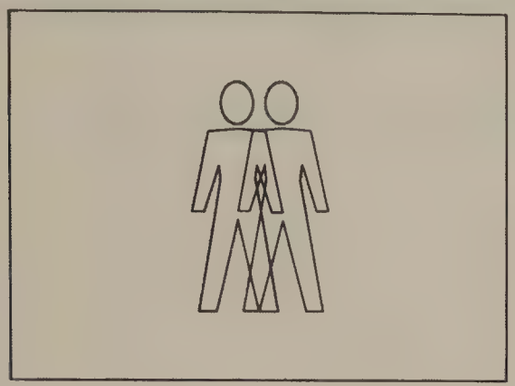
FOCUSING SCREENS

Activity D
Unit 6

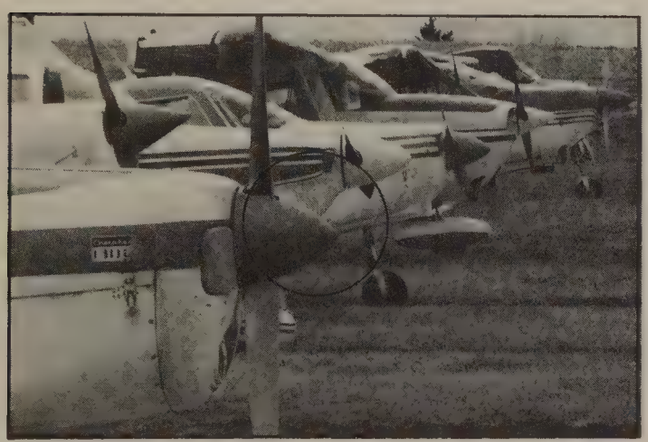
Name _____
Date _____ Period _____

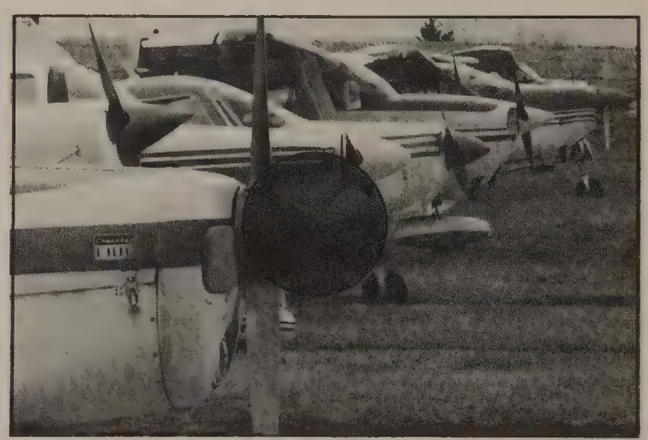
Three types of focusing screens are shown below. Place a check next to the screens that are in focus and identify the three types of focusing screens.

A 

B

1. Type of focusing screen: _____

A 

B 

2. Type of focusing screen: _____

A

B

3. Type of focusing screen: _____

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DEPTH OF FIELD

Activity E
Unit 6

Name _____
Date _____ Period _____

Arrange six objects (such as the cans in Fig. 6-32 of the text) at least eight inches apart in a row. Position the camera so that the cans appear to run diagonally in the viewfinder. Focus on the fourth object in the viewfinder. Take a series of photographs varying the f-stops each time. (For proper exposures, the shutter speed will need to be varied along with the f-stops.) Process the film. In the space below, mount the photograph displaying the shallowest depth of field and the photograph displaying the greatest depth of field.

Shallow depth of field

Taken at: f/_____

Great depth of field

Taken at: f/_____

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PHOTOGRAPHING MOTION

Activity F
Unit 6

Name _____
Date _____ Period _____

As a photographer, you may want to photograph a moving object. You may want to "stop" the motion, or you may want a "blur" to emphasize the motion.

1. Stop the action of a person engaged in an outdoors physical activity (running, riding a bike, etc.). Use a high shutter speed such as 1/500 second. Mount your best "stop" motion photograph in the space below.

2. Photograph the motion of the same person as a "blur" to emphasize the motion. Use a slow shutter speed such as 1/8 second. Mount your best "blur" motion photograph in the space below.

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USING A LIGHT METER

Activity G
Unit 6

Name _____
Date _____ Period _____

In daylight, fasten an 18 percent gray card, a white card, and a black card on an outdoor wall. Move in close to each card to fill your camera's viewing screen. Set your camera or light meter to 1/125 second. Record the aperture that your meter indicates for a proper exposure for each card. (Do not change the shutter speed. Change only the aperture for the proper exposure.)

18 percent gray card - 1/125 second, f/_____
White card - 1/125 second, f/_____
Black card - 1/125 second, f/_____

Describe the great variation in exposure for different backgrounds under identical lighting conditions. _____

Which exposure would you choose if you were photographing a subject under these lighting conditions? Explain why. _____

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PHOTO COMPOSITION EXAMPLES

Activity H
Unit 6

Name _____
Date _____ Period _____

Take your own photographs or find photos in newspapers or magazines of examples of the following photo composition techniques. Mount the examples in the spaces provided. Below each example, describe how the composition technique is used in the photo.

1. Camera angle: _____

_____

2. Panning: _____

_____

(Continued)

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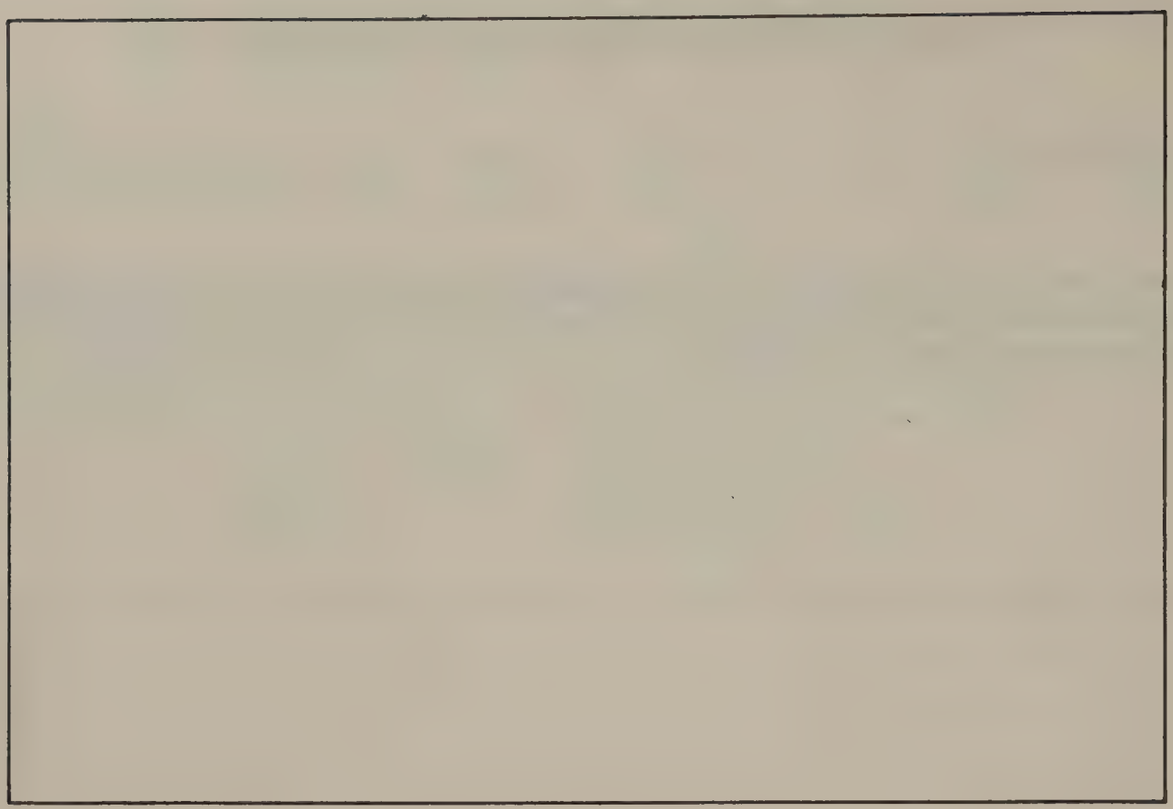
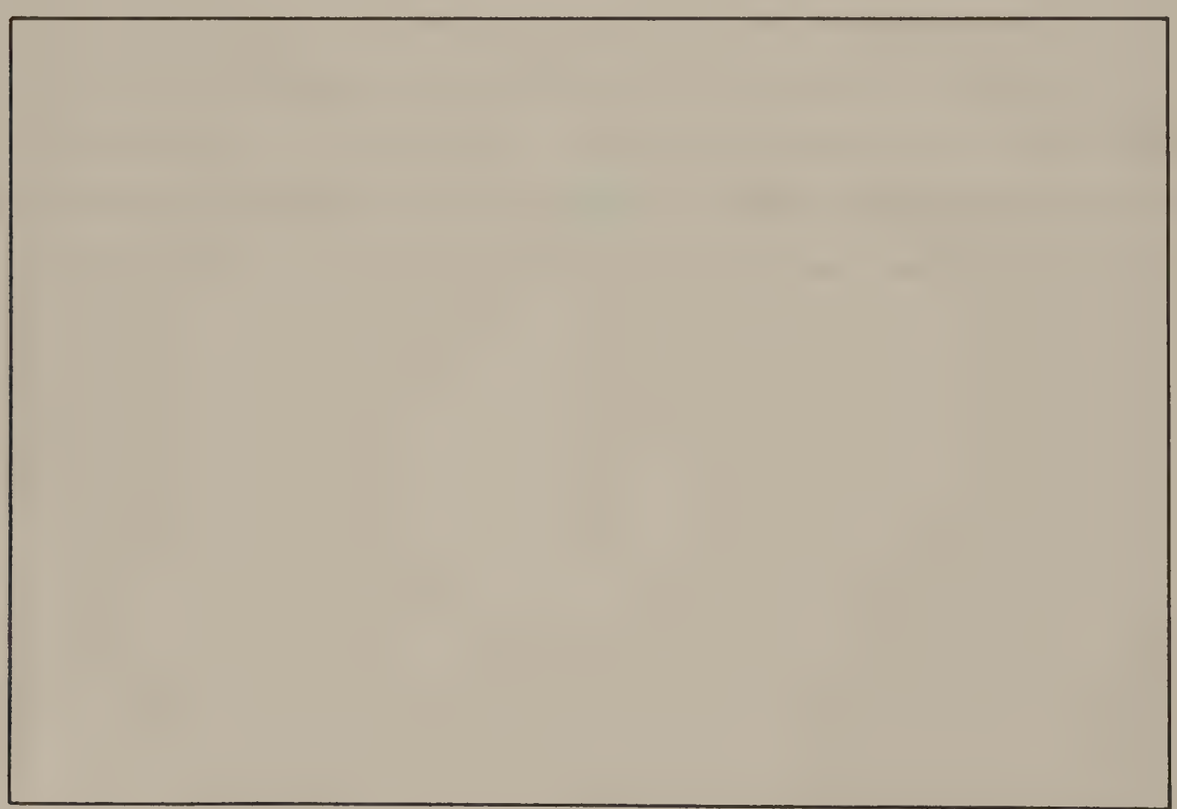


3. Framing: _____

_____



4. Background: _____

_____

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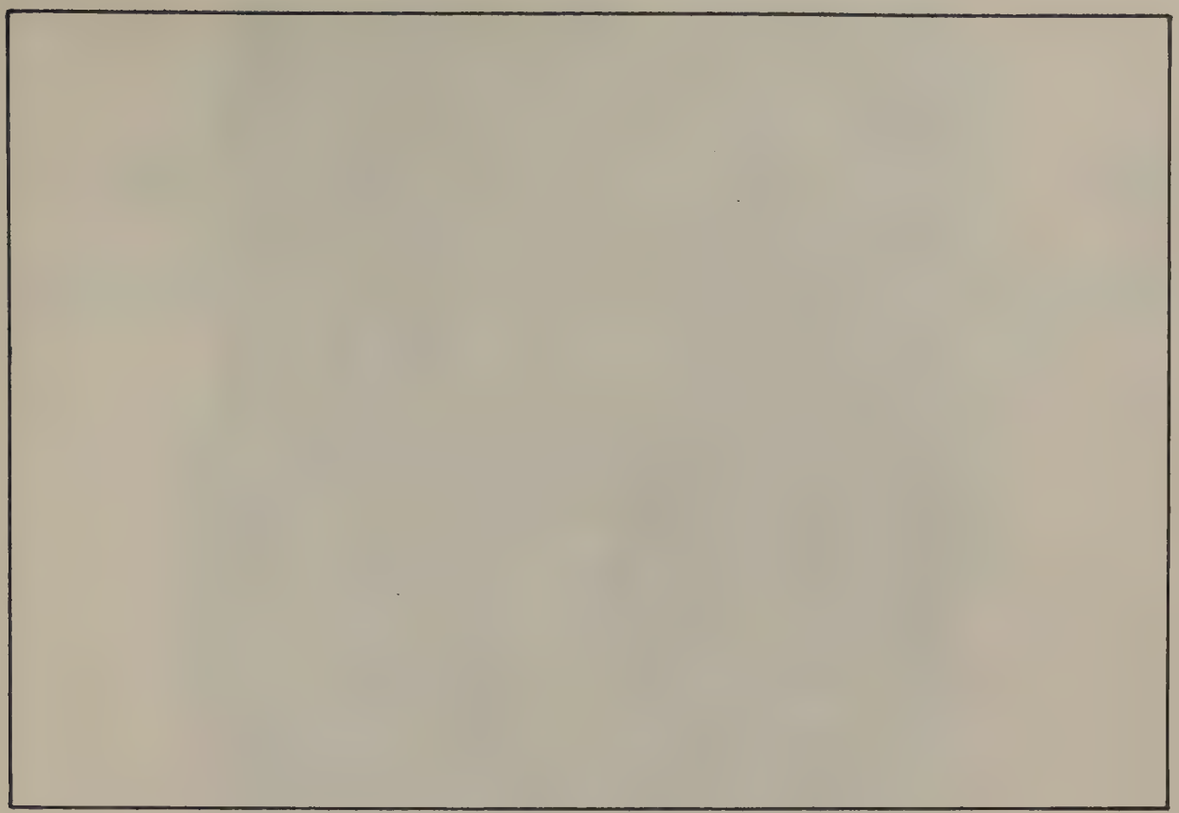
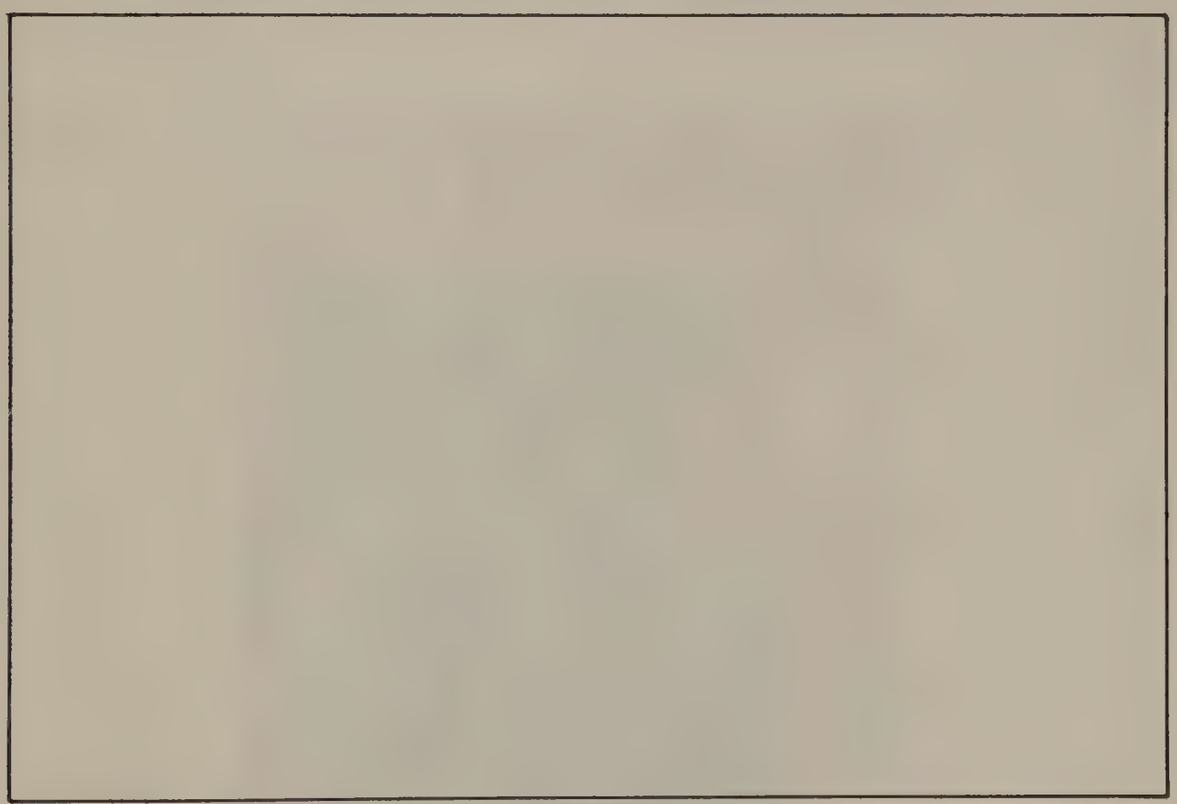


5. Selective focus: _____

_____



6. Point of interest: _____

_____

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JUDGING COMPOSITION

Activity I
Unit 6

Name _____
Date _____ Period _____

Look at the photographs below. Rate the composition of each photograph as good or bad. Then explain your rating.

1. Rating: _____

   Explanation: _____

   _____

2. Rating: _____

   Explanation: _____

   _____

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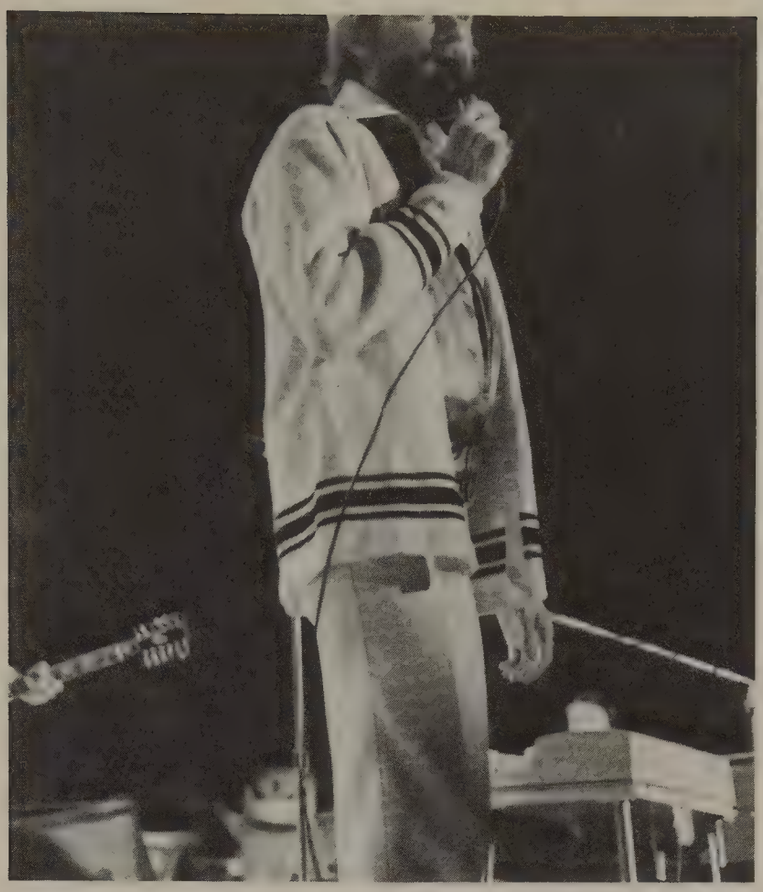

3. Rating: _____

   Explanation: _____

   _____

4. Rating: _____

   Explanation: _____

   _____

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COMPOSING YOUR OWN PHOTOGRAPH

Activity J
Unit 6

Name _____
Date _____ Period _____

Demonstrate your creativity and ability to arrange and photograph three objects in a harmonious and pleasing scene. Use one or more composition techniques described in Unit 6. Mount your best photo below and describe the composition technique(s) you used to compose the photograph.

Description of composition technique(s) used: _____

_____

_____

_____

_____

_____

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7 LIGHTING

USING LIGHTING TECHNIQUES

Activity A
Unit 7

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about using lighting techniques.

1. Success in capturing a subject depends on the photographer's skill in controlling _____. 1. _____

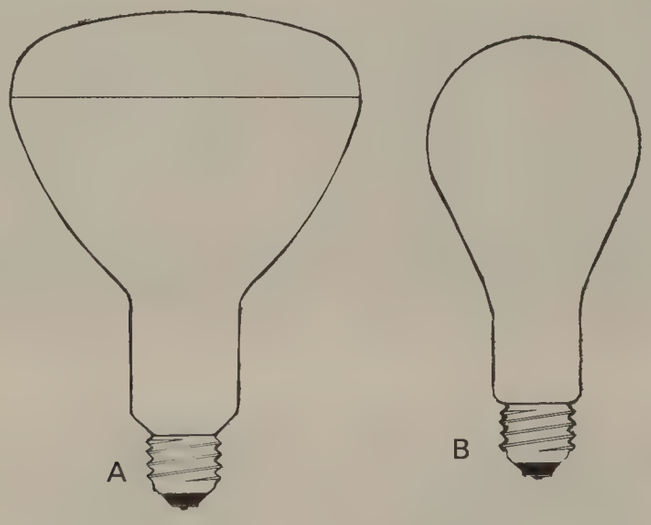
2. For a frontlighted scene, keep the sun behind the _____ *(camera, subject).* 2. _____

3. A sunset silhouette is an example of _____. 3. _____

4. A _____ can lighten shadows on a nearby subject on a sunny day. 4. _____

5. The _____ indicates the brightness of a floodlight. 5. _____

6. Identify the floodlights below. 6. A. _____
B. _____



7. Name two types of flash illumination available to the photographer. 7. _____
_____

8. Blue bulbs can be used with color and black and white films. *(True or False)* 8. _____

9. Clear bulbs should be used only with black and white films. *(True or False)* 9. _____

(Continued)

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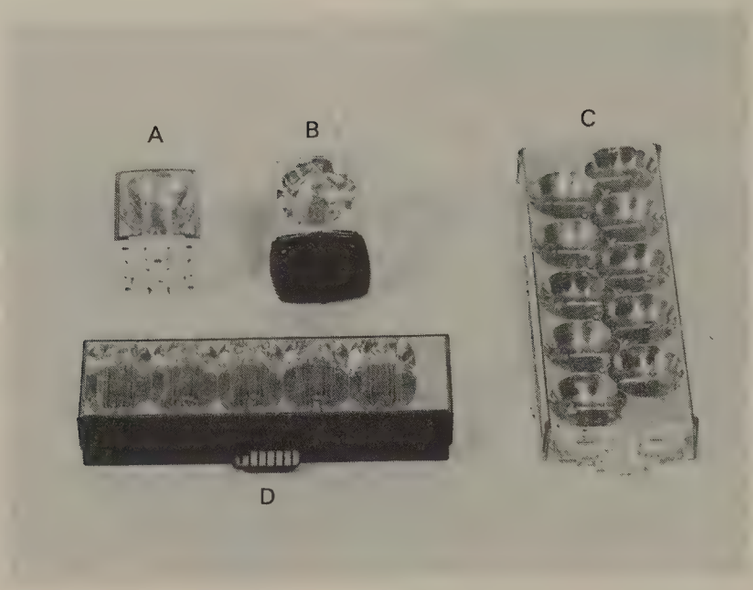
10. Identify the following.

10. A._____
B._____
C._____
D._____



11. An electronic flash may be powered by which of the following sources:
a. AC "house current" power.
b. Rechargeable nickel cadmium batteries.
c. Disposable batteries.
d. All of the above.

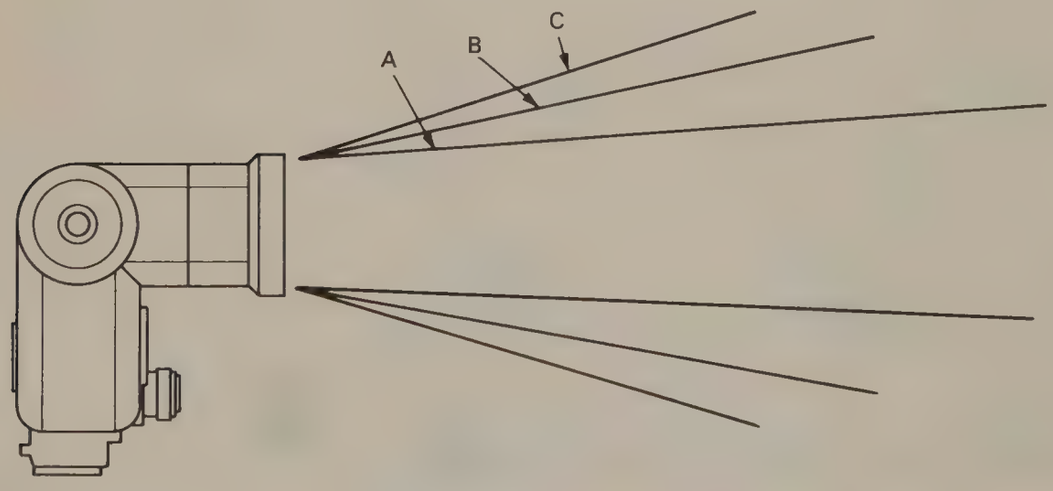
11. _____

12. List the three main parts of an electronic flash unit.

12. _____
_____
_____

13. The beam of the flash must be wider than the lens' angle of view. Identify the beams of light below. *(Normal lens, telephoto lens, wide angle lens)*

13. A._____
B._____
C._____



14. As distance from the flash to the subject increases, the amount of light needed to make the exposure _____ *(increases, decreases),* but at a faster rate.

14. _____

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15. If an electronic flash has not been used for sometime, it will be necessary to "_____" the capacitor by "flashing" the unit a few times. Otherwise, the flash may not produce full-power brightness. 15. _____

16. _____ flash is an indoor lighting technique that illuminates the subject by reflecting light from the flash off the ceiling or a wall. 16. _____

17. _____ flash is used outdoors when part of the subject is shaded. 17. _____

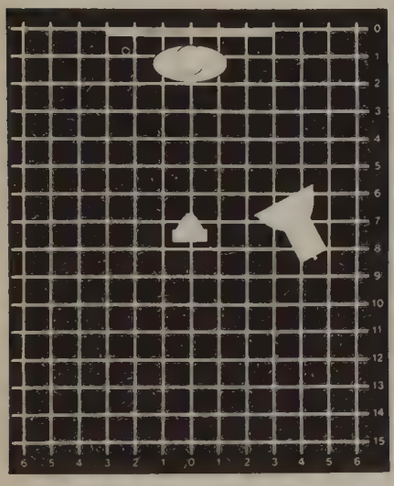
18. You can avoid "red eye" or "white eye" when taking photographs by: 18. _____
    a. Moving the flash a short distance away from the camera.
    b. Having the subject look slightly away from the flash.
    c. Both a and b.
    d. None of the above.

LIGHT ANGLES AND PLACEMENT

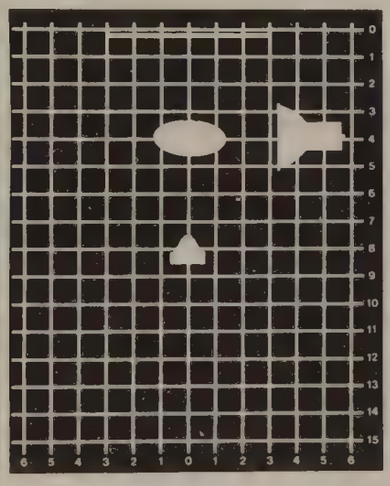
Activity B
Unit 7

Name _____
Date _____ Period _____

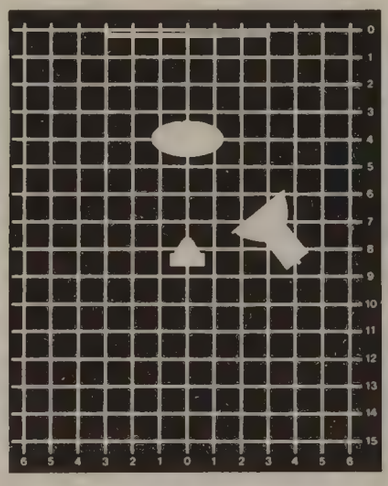
Match the photos with the angles and placement of lights used to produce them.



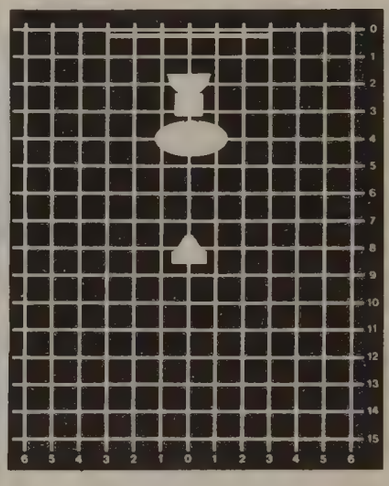
A. FLAT FRONTAL LIGHTING



B. 90 DEGREE LIGHTING



C. 45 DEGREE LIGHTING



D. BACKLIGHTING

1. _____ 2. _____ 3. _____ 4. _____

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PRODUCING LIGHTING EFFECTS

Activity C
Unit 7

Name _____
Date _____ Period _____

Take a series of photographs of a person indoors. Vary the angles and placement of the light to produce different lighting effects. (You may wish to use the sketches shown in Activity B in determining how to arrange the subject, lighting, and camera.) In the space below, mount photos showing each of the following types of lighting.

FLAT FRONTAL LIGHTING

90 DEGREE LIGHTING

45 DEGREE LIGHTING

BACKLIGHTING

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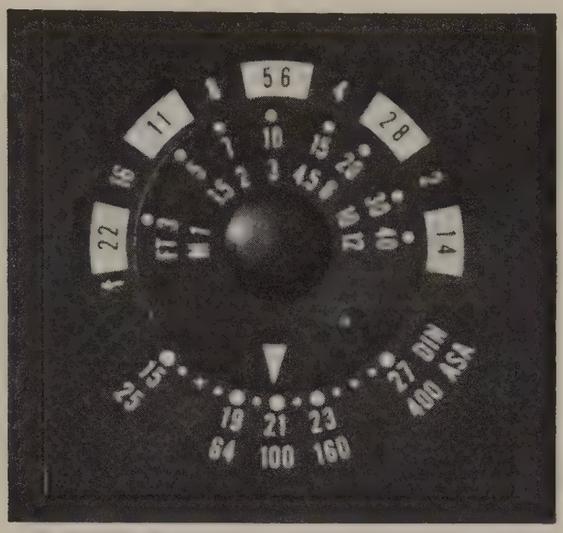
USING AN ELECTRONIC FLASH UNIT

Activity D
Unit 7

Name _____
Date _____ Period _____

Answer the following questions about using the electronic flash unit pictured below.



1. At what film speed is this electronic flash unit set?

_____

2. What is the correct f-stop for photographing a subject at five feet using this electronic flash unit?

_____

3. What is the correct f-stop for photographing a subject at 20 feet using this electronic flash unit?

_____

4. In your own words, explain how to use an electronic flash. _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

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8 THE BASIC DARKROOM

DARKROOM BASICS

Activity A
Unit 8

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about the darkroom.

1. Any area that can be made _____ _____ is suitable for use as a darkroom. 1. _____

2. The _____ projects (casts) an enlarged image from the negative onto a sheet of print paper. 2. _____

3. The enlarging _____ holds the print paper flat under the enlarger lens and provides the mask for the white border around the print. 3. _____

4. A shutter in the enlarger lens controls the length of exposure. *(True or False)* 4. _____

5. Undeveloped film is generally sensitive to rays from the safelight and will be fogged if exposed to the light. *(True or False)* 5. _____

6. Which of the following is best to use to trim print paper to size in the dim light of a darkroom: 6. _____
   a. Scissors.
   b. Paper cutter.
   c. Knife.
   d. None of the above.

7. At least _____ processing trays are used in the darkroom to hold developing solutions. 7. _____

8. When making prints, you should pick the prints up with your hands to move them from processing tray to processing tray. *(True or False)* 8. _____

9. Print papers are available with two types of bases: _____ and _____. 9. _____ _____

10. For best results, print processing _____ must be fresh, free from contamination, and mixed as recommended by the manufacturer. 10. _____

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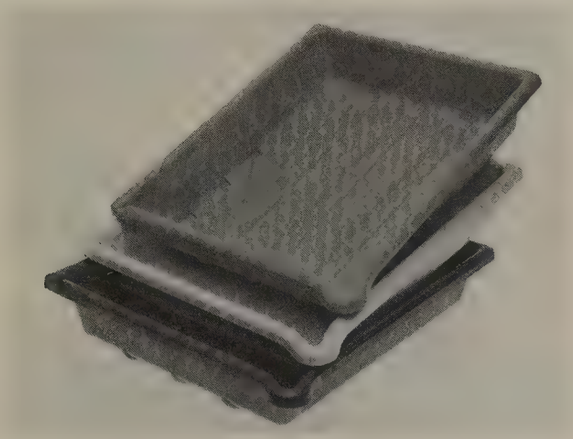
DARKROOM EQUIPMENT IDENTIFICATION

Activity B
Unit 8

Name _____
Date _____ Period _____

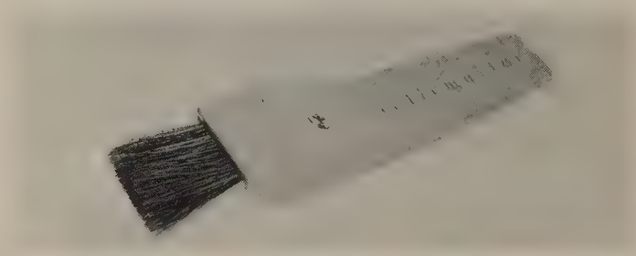
Identify the darkroom equipment pictured below and on the following pages. Then in your own words, briefly describe how the equipment is used.



1. _____
_____
_____

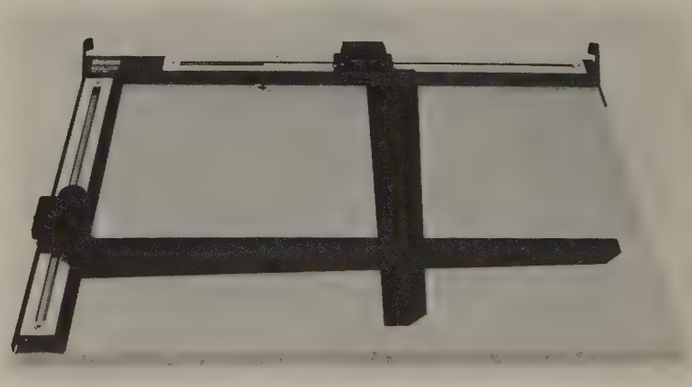
2. _____
_____
_____

3. _____
_____
_____



4. _____
_____
_____

5. _____
_____
_____



6. _____
_____
_____

(Continued)

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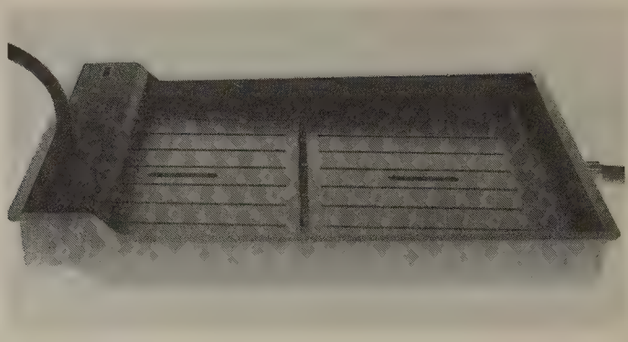
7. _____

_____

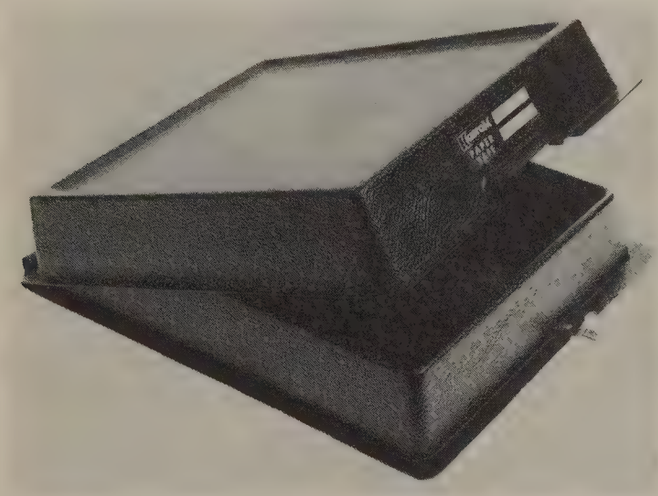
_____



8. _____

_____

_____



9. _____

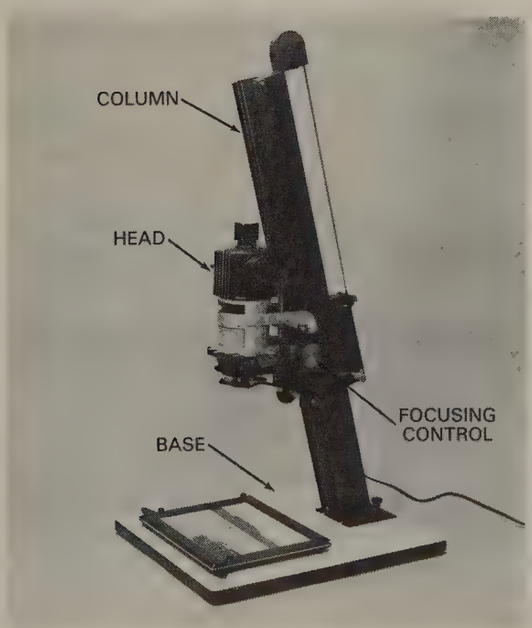
_____

_____

10. _____

_____

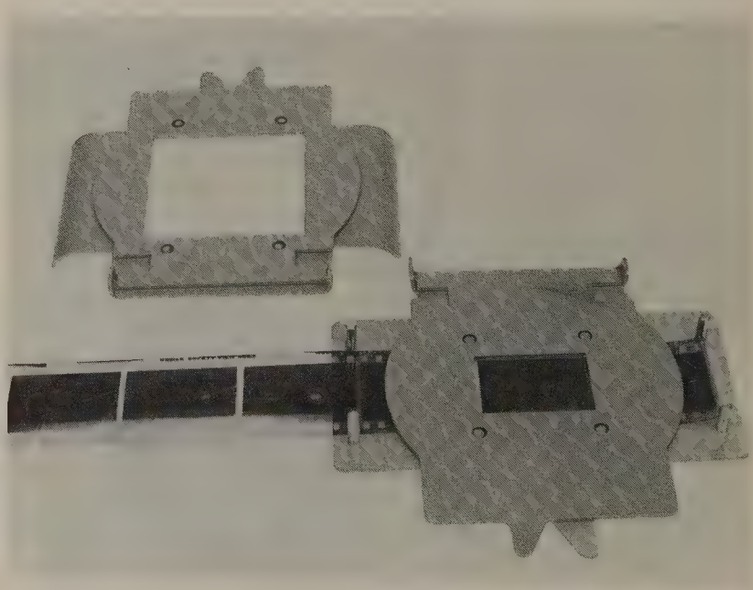
_____



11. _____

_____

_____



12. _____

_____

_____

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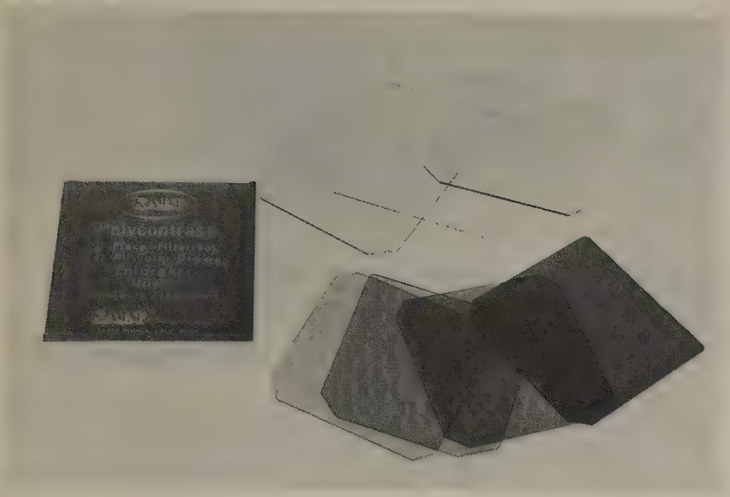
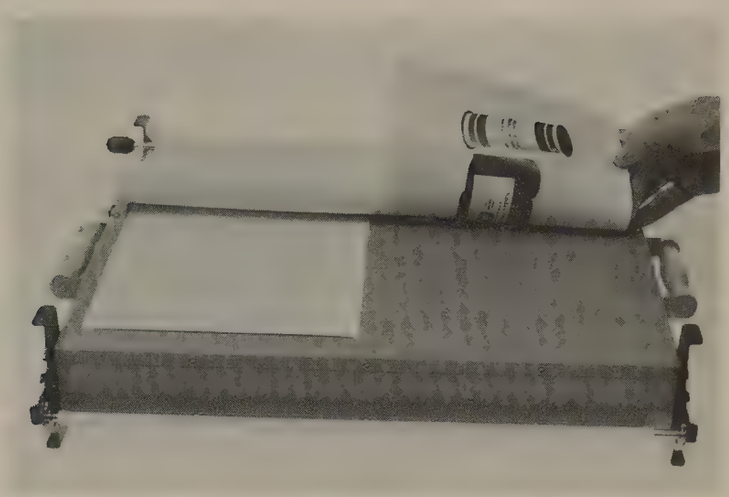


13. _____

_____

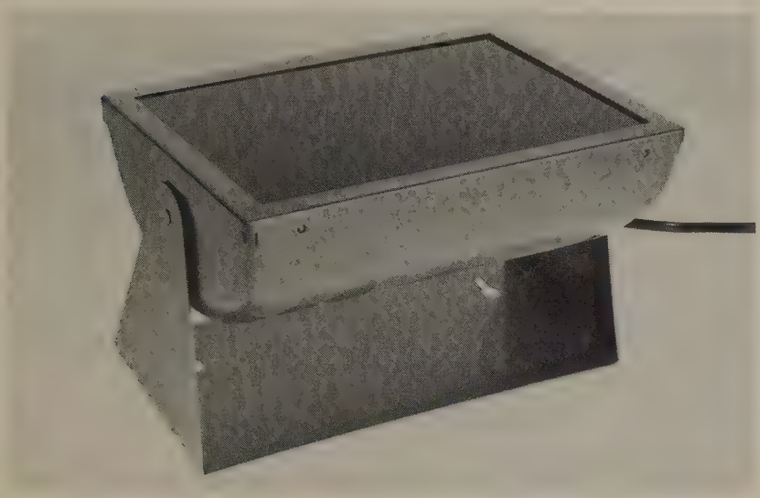
_____



14. _____

_____

_____



15. _____

_____

_____

16. _____

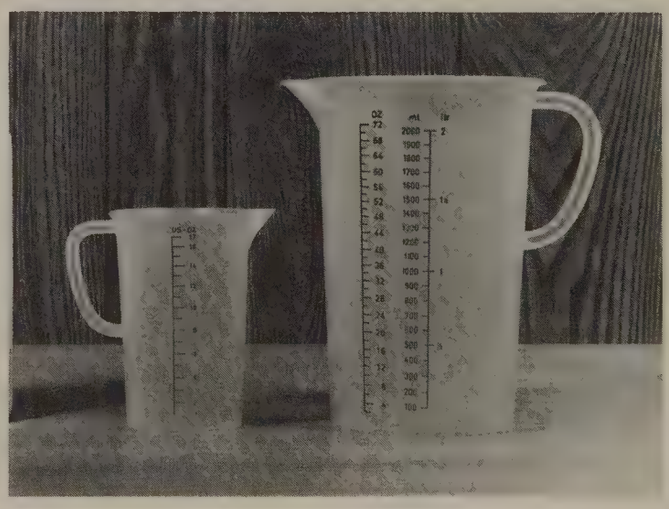
_____

_____

17. _____

_____

_____



18. _____

_____

_____

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YOUR OWN DARKROOM

Activity C
Unit 8

Name _____
Date _____ Period _____

Suppose that you want to set up a darkroom of your own. List the equipment that you would need to set up a *basic* darkroom. Estimate what each item of equipment would cost. Then visit a store that sells darkroom supplies and give the actual cost for each item of equipment that you would need.

Store: _____

Equipment	Estimated cost	Actual cost
TOTAL		

How do your estimated costs and actual costs compare? _____

_____

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9 HOW TO DEVELOP BLACK AND WHITE FILM

THE DEVELOPING PROCESS

Activity A
Unit 9

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about developing black and white film.

1. _____ is a method of bringing the image out of the film so it can be seen. 1. _____

2. After it has gone through the development process, the film is known as a _____ because the image is the exact opposite of the subject photographed. 2. _____

3. Light areas of a subject are seen as _____ *(light, dark)* areas on a negative. 3. _____

4. List the three basic chemical solutions needed to develop exposed black and white film. 4. _____ _____ _____

5. The _____ changes exposed silver salts into black metallic silver which brings out the image on the film. 5. _____

6. _____ _____ neutralizes (makes inactive) the developer and prevents further development. 6. _____

7. _____ dissolves all remaining unexposed silver salts in the film emulsion so that the salts can be removed by washing the film in running water. 7. _____

8. Film should not be exposed to light until the fixing cycle is complete. *(True or False)* 8. _____

9. Film must be thoroughly washed to remove all traces of fixer before the negative dries. Wash temperatures must be kept between _____ - _____ °F (_____ - _____ °C) for best results. 9. _____

10. All developers have a _____ _____ which is the period of time that the mixed solutions retain their usefulness. 10. _____

11. An accurate _____ is a must when processing film. 11. _____

12. Exposed film must be wound on the reel in complete darkness. *(True or False)* 12. _____

(Continued)

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13. Once film is loaded into the developing tank and the lid is locked in place, the lights can be turned on. *(True or False)* 13. _____

14. If a developing solution has a dilution factor of 1:3, the mixture contains one part developer and three parts water. *(True or False)* 14. _____

15. The developing tank should be rapped on a hard surface several times during the first minute of development to dislodge _____ _____ that may be clinging to the film. 15. _____

16. After the developer has been drained from the tank, pour in: 16. _____
    a. The fixer.
    b. More developer.
    c. The stop bath.
    d. Hypo clearing solution.

17. You can determine the freshness of fixer with a _____ _____. 17. _____

18. A hypo clearing solution will greatly _____ *(increase, reduce)* wash time. 18. _____

19. A _____ _____ prevents water from beading on the film as it drys. 19. _____

20. Film negatives should be stored in regular postal envelopes. *(True or False)* 20. _____

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PREPARING CHEMICALS SAFELY

Activity B
Unit 9

Name _____
Date _____ Period _____

Obtain the materials needed to develop black and white film. Carefully read the instructions and safety precautions that should be observed when mixing and using the chemicals. In the space below, prepare a list of the precautions and how you plan to observe them.

Observing the mixing precautions listed above and on each chemical packet, mix the chemicals as instructed. Label the containers with the name of the solution, its dilution, and the date it was mixed. Explain why you labeled the container with this information. _____

Thoroughly clean the area after the mixing is done and carefully wash your hands. Explain the reason for this step.

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DEVELOPING BLACK AND WHITE FILM

Activity C
Unit 9

Name _____
Date _____ Period _____

Develop an exposed roll of black and white film according to the directions below.

Materials:

Exposed roll of black and white film

Developing tank and reel

Thermometer

Chemicals: (Film developer, stop bath, fixer, hypo clearing agent, wetting agent)

Timer

Sponge

Procedure:

Fill in the following information. Then follow the processing directions.

Film _____

Developer _____

Developer temperature range

Recommended dilution _____:_____

Recommended temperature _____

Developing time at recommended temperature and dilution _____

Stop bath _____

Recommended temperature range

Recommended time _____

Fixer _____

Recommended temperature range _____

Recommended time _____

Hypo clearing agent _____

Recommended temperature range _____

Recommended time _____

Wetting agent _____

Recommended temperature range _____

Recommended time _____

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How to Develop Black and White Film

1. Read the directions for your reel and tank. Practice loading with a blank roll of film.
2. When you feel you have mastered loading your reel in the dark, turn off the light and open the exposed roll of film.
3. Load the reel and insert it into its light tight tank. When the lid is locked in place, turn on the lights.
4. Check the temperature of the developer. Adjust the temperature if necessary by placing the container in warm or cool water. Make sure that the stop bath and fixer are within several degrees of the developer temperature.
5. Pour developer into the tank. Start the timer for the recommended time. Rap the tank on a hard surface several times to dislodge air bubbles.
6. Agitate the tank for five seconds, twice each minute.
7. Pour out the developer upon completion of the developing time. Diluted developer should be discarded.
8. Pour in stop bath and agitate once or twice during the 15-30 second process.
9. Pour stop bath back into its original container.
10. Pour in fixer and agitate according to directions.
11. Pour out the fixer and return to its original container.
12. Immediately wash the film on the reel in running water. Wash for 25-30 minutes. The temperature should be close to processing temperatures. You can use a hypo clearing agent after fixing to reduce washing time.
13. After washing, immerse the film in a wetting agent to prevent drying marks.
14. Remove the film from the reel to dry. Hang film in a dust-free room. Place a clip on the loose end to prevent curling. To speed drying, carefully wipe the surface with a clean sponge.
15. When dry, place the negatives in protective plastic or glassine sleeves.
16. In the space below, briefly evaluate the quality of your negatives.

17. Submit the negatives to your instructor.

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10 MAKING BLACK AND WHITE PRINTS

PRINTING BASICS

Activity A
Unit 10

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about making black and white prints.

1. To obtain a photograph that looks like the original scene or subject, the image on the negative must be transferred to light-sensitive paper. This transfer process is called _____. 1. _____

2. _____ is an alkaline chemical that causes the light-struck silver crystals to turn black. 2. _____

3. _____ _____ is an acidic chemical that halts the developing process. 3. _____

4. The undeveloped silver particles are dissolved by another acidic chemical called _____. 4. _____

5. List the four characteristics of print paper. 5. _____
_____
_____
_____

6. Since _____ *(fiber base, resin coated)* papers do not absorb processing chemicals, fixing, washing, and drying times are shortened. 6. _____

7. Which surface texture in print paper shows details most clearly? 7. _____
   a. Glossy.
   b. Semi-matte.
   c. Pearl.
   d. Silk.
   e. Fabric.

8. The weight of a print paper refers to its thickness. *(True or False)* 8. _____

9. A high contrast paper is used with a _____ *(high, low)* contrast negative. 9. _____

10. A _____ print is made by placing a negative on a piece of print paper and exposing it to light. 10. _____

11. An _____ is made by placing the negative in an enlarger and projecting the image onto print paper. 11. _____

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12. The darkroom should be kept spotlessly clean because dust and dirt will cause spotted prints. *(True or False)* 12. _____

13. Tongs used in stop bath can be used in the developer. *(True or False)* 13. _____

14. The correct order of developing chemicals is: 14. _____
    a. Fixer, stop bath, developer.
    b. Developer, fixer, stop bath.
    c. Fixer, developer, stop bath.
    d. Developer, stop bath, fixer.
    e. Stop bath, developer, fixer.

15. You have made a print using an exposure of 20 seconds at f/8. The print appears a bit too dark. You should adjust the next exposure to _____ *(15, 25)* seconds at f/8. 15. _____

16. Scratch remover is useful in eliminating scratches on the emulsion side of a negative. *(True or False)* 16. _____

17. The elimination of unwanted areas on a print is called: 17. _____
    a. Burning-in.
    b. Cropping.
    c. Dodging.

18. If part of an enlargement is too dark, it is possible to lighten the area by holding back some of the projected light. This is called: 18. _____
    a. Burning-in.
    b. Cropping.
    c. Dodging.

19. When part of an enlargement is too light, the light area can be given additional exposure. This is called: 19. _____
    a. Burning-in.
    b. Cropping.
    c. Dodging.

20. A _____ _____ produces a print within 10 seconds. 20. _____

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DODGING AND BURNING-IN

Activity B
Unit 10

Name _____
Date _____ Period _____

Complete the following exercise on dodging and burning-in.

A

B

C

D

1. Which photos are straight prints? _____ and _____
2. Which photo was improved by dodging? _____ How was this done?

_____

_____

_____

_____

3. Which photo was improved by burning-in? _____ How was this done?

_____

_____

_____

_____

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MAKING A CONTACT PRINT AND AN ENLARGEMENT

Activity C
Unit 10

Name _____
Date _____ Period _____

Take a series of photographs and develop the film. Fill in the information below.

Photographic paper: _____

Paper base: _____

Surface texture: _____

Weight: _____

Contrast: _____

Developer: _____

Recommended dilution: _____:_____

Recommended temperature range: _____

Recommended developing time: _____

Stop bath: _____

Recommended temperature range: _____

Recommended time in stop bath: _____

Fixer: _____

Recommended temperature range: _____

Recommended fixing time: _____

Contact print:

Make a contact print following the directions given on pages 130-134 of the text.

In the following space, evaluate your contact print. _____

Choose three photos on the contact sheet which you consider to be the best. Explain why these photos might make good enlargements. _____

(Continued)

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Enlargement:

Choose what you consider to be the best photo from the contact sheet. Make an enlargement following the directions on pages 134-138 of the text.

In the following space, evaluate your enlargement.

Could the quality of this print be improved by removing any scratches? Explain.

Could the quality of this print be improved by cropping? Explain.

Could the quality of this print be improved by dodging or burning-in? Explain.

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11 FILTERS

FILTERS IN PHOTOGRAPHY

Activity A
Unit 11

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about filters.

1. Most _____ absorb light of certain colors while allowing light of other colors to pass. 1. _____

2. It is often possible to improve black and white picture quality by using: 2. _____
   a. Correction filters.
   b. Contrast filters.
   c. Haze reduction filters.
   d. All of the above.

3. _____ films record nearly all of the colors (with the exception of blue and green) in about the same degree of brightness as seen by the normal eye. 3. _____

4. When using black and white film, a _____ *(green, yellow, blue)* filter will reduce the film's sensitivity to the blue sky so the sky will appear darker, and any clouds in the scene will be emphasized. 4. _____

5. To increase contrast between reds and greens when using black and white film, a green or red filter should be fitted over the lens. *(True or False)* 5. _____

6. Use of a haze filter will reduce or eliminate haziness caused by: 6. _____
   a. Ultraviolet light.
   b. Smoke.
   c. Fog.
   d. All of the above.

7. List the three types of filters used solely with color films. 7. _____
   _____
   _____

8. A _____ filter will reduce the bluish cast seen in unfiltered photos of snow scenes or of subjects photographed in shade or under overcast skies. 8. _____

9. _____ filters permit the same film to be used indoors with artificial light and out-of-doors in daylight. 9. _____

(Continued)

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10. _____ _____ filters control only a part of the color spectrum such as red, green, or blue. The filter will transmit the other two colors. 10. _____

11. List three types of filters that can be used with either black and white or color films. 11. _____ _____ _____

12. A polarizing filter can: 12. _____
    a. Darken skies.
    b. Reduce or eliminate haze.
    c. Reduce or eliminate reflections from nonmetallic surfaces such as glass.
    d. All of the above.

13. A _____ _____ filter would be useful when you have high speed film in the camera and conditions are extremely bright such as on the beach or in a snow scene. 13. _____

14. A _____ - _____ filter will cause star-shaped flares or highlights in night scenes, seascapes, and still lifes. 14. _____

15. A _____ _____ filter will enhance a portrait by eliminating small wrinkle lines, blemishes, and other skin faults. 15. _____

16. Since most filters _____ *(reduce, increase)* the amount of light transmitted by a lens, it is necessary to increase film exposure time. 16. _____

17. The increase in film exposure time which is necessary when a filter is used is called the _____ _____. 17. _____

18. No changes in exposure times are necessary when filters are used on cameras with through-the-lens metering. *(True or False)* 18. _____

19. List the three forms of filters. 19. _____ _____ _____

20. The photo below is an example of _____. This problem occurs when two or more filters are "stacked" on the lens. 20. _____

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FILTER USES

Activity B
Unit 11

Name _____
Date _____ Period _____

Complete the following chart by describing when the filters listed below would be used and with what type of film they would be used.

Filter	Use	Film
Correction		
Contrast		
Haze reduction		
Skylight		
Conversion		
Color-correcting		
Polarizing		
Neutral density		
Cross-screen		
Soft focus		
Color filters:		
Red		
Green		
Blue		
Yellow		
Others:		

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FILTER EFFECTS

Activity C
Unit 11

Name _____
Date _____ Period _____

Demonstrate the effects of yellow, green, and red filters when used with black and white film.

Materials: Camera
1 roll of medium speed black and white film
Yellow filter
Green filter
Red filter

Procedure:
Take the two series of photographs described below. (If your camera does not have through-the-lens metering, remember to increase the exposure time based on the filter factor.)

Series 1: Person wearing red clothing standing against a background of green foliage.

Photograph	Filter	Description of photograph
1	No filter	
2	Yellow	
3	Green	
4	Red	

Series 2: Building surrounded by green foliage on a clear day with billowy clouds.

Photograph	Filter	Description of photograph
5	No filter	
6	Yellow	
7	Green	
8	Red	

Evaluation:

1. Which print in each series seems most natural? Why?

Series 1: _____

_____

_____

_____

Series 2: _____

_____

_____

_____

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2. Which filter in each series lightens the green foliage? Why?

   Series 1: _____

   _____

   _____

   _____

   Series 2: _____

   _____

   _____

   _____

3. Which filter in each series darkens the green foliage? Why?

   Series 1: _____

   _____

   _____

   _____

   Series: _____

   _____

   _____

   _____

4. Which filter yields the greatest contrast between the red clothing and green foliage in Series 1? Why?

   _____

   _____

   _____

   _____

5. Which filter yields the least contrast between the red clothing and green foliage in Series 1? Why? ____

   _____

   _____

   _____

   _____

6. Which filter darkens the sky the most in Series 2? Why? _____

   _____

   _____

   _____

   _____

Label the photographs according to the filter used and submit them to your instructor.

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12 COLOR PHOTOGRAPHY

THE ART OF COLOR PHOTOGRAPHY

Activity A
Unit 12

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about color photography.

1. Without light there can be no _____. 1. _____

2. List the three additive primary colors. 2. _____
_____
_____

3. When light of the three primary colors are added together, _____ light results. 3. _____

4. Mixing light to create a color is quite different from creating a color by mixing pigments as they would be to paint a picture. *(True or False)* 4. _____

5. Color films are made in the same sizes as black and white films. *(True or False)* 5. _____

6. List the four types of film used in color photography. 6. _____
_____
_____
_____

7. Color _____ film is used for scientific purposes, but can be used by amateurs to produce unusual and often unpredictable colors on a transparency (slide). 7. _____

8. Color _____ film is normally used to make color prints. 8. _____

9. Color _____ film is also known as color reversal film because the image on the film is reversed from a negative to a positive during processing. 9. _____

10. _____ color film produces a finished print in less than a minute. 10. _____

11. Photos made indoors with daylight balanced film and ordinary household lighting tend to have a _____ *(reddish, bluish, yellowish)* cast. 11. _____

12. Photos made outdoors with tungsten film and sunlight tend to have a _____ *(redish, bluish, yellowish)* tint. 12. _____

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13. Color negative film produces a negative image in which all colors are recorded as the _____ of the colors of the subject. 13. _____

14. Color reversal film requires more processing steps than color negative film. *(True or False)* 14. _____

15. Color film processing can be done with the same equipment used to process black and white film. *(True or False)* 15. _____

16. Color film processing is easier than processing black and white film. *(True or False)* 16. _____

17. When processing color film, temperatures are more critical than with black and white film. An accurate _____ is an absolute necessity. 17. _____

18. Color print film should be stored in which place until ready for use? 18. _____
    a. In a freezer.
    b. In a cabinet.
    c. Outdoors.
    d. None of the above.

19. Borders on a color reversal print will be _____ *(black, white).* 19. _____

20. The paper and chemicals for color negative film and color reversal film are interchangeable. *(True or False)* 20. _____

21. Most color processing requires _____ *(high, low)* solution temperatures. 21. _____

22. You should be proficient at black and white processing before attempting color work. *(True or False)* 22. _____

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COLOR INFRARED FILM

Activity B
Unit 12

Name _____
Date _____ Period _____

Visit the library. Research color infrared film. In the space below, describe how it is used in each of the following areas.

Science: _____

Agriculture: _____

Industry: _____

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TAKING COLOR PHOTOGRAPHS

Activity C
Unit 12

Name _____
Date _____ Period _____

Load your camera with a roll of color film. Take a series of color photographs both indoors and outdoors. You may wish to process the film yourself or have it commercially processed. Then answer the questions below.

1. What type of film did you use? _____

2. What is the ISO/ASA of the film? _____

3. Is the film designed for use in daylight or with tungsten lamps? _____

4. Evaluate the photographs taken indoors. _____

5. Evaluate the photographs taken outdoors. _____

6. Is there a difference between the photographs taken indoors and those taken outdoors? Explain your answer.

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COMPARING COLOR FILM AND PROCESSING KITS

Activity D
Unit 12

Name _____
Date _____ Period _____

Visit a local camera store or the camera section of a department store. List and compare the variety of color films available.

Film brand	ISO/ASA rating	Characteristics of film	Cost

Compare color film processing kits.

Kit brand	Film that can be processed using this kit	Cost

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13 CLOSE-UP AND PHOTOMACROGRAPHY

USING CLOSE-UP AND PHOTOMACROGRAPHY

Activity A
Unit 13

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about close-up and photomacrography.

1. Most adjustable lenses focus as close as 2 to 3 ft. *(True or False)* 1. _____

2. A 1 in. high object filling a 35 mm frame has a _____:_____ image to subject ratio that is life size. 2. _____

3. An object 4 in. high filling a 1 in. high 35 mm frame has an image to subject ratio of _____:_____. 3. _____

4. An object 1/4 in. high filling a 1 in. high 35 mm frame has an image to subject ratio of 4:1. This is a magnification of _____X. 4. _____

5. Photographing objects larger than life size through 25:1 (25X) is called _____. 5. _____

6. Photographing objects that cover the range of 1:10 through 1:1 is called _____-_____ photography. 6. _____

7. The technique of mounting a camera on a microscope for even greater magnification is called _____. 7. _____

8. Magnification of _____X and higher can be made on a scanning electron microscope. 8. _____

9. Close-up lenses are positive supplementary lenses that _____ *(lengthen, shorten)* the focal length. 9. _____

10. Close-up lenses usually come in a set of three: +1, +2, and +4. The higher the number, the _____ *(more, less)* the magnifying power will be. 10. _____

11. Close-up lenses require exposure compensation. *(True or False)* 11. _____

12. When using extension tubes, longer focal length lenses will give a greater working distance. *(True or False)* 12. _____

13. Extension tubes give best results when the subject is _____ *(larger, smaller)* than 1 in. 13. _____

14. Bellows are best used when the subject is _____ *(larger, smaller)* than 1 in. 14. _____

(Continued)

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15. Which of the following are more costly and cumbersome to use, but are more flexible and permit life size or larger images to be made? 15. _____
    a. Extension tubes.
    b. Close-up lenses.
    c. Bellows.
    d. None of the above.

16. The problem of parallax occurs with rangefinder and twin lens reflex cameras. *(True or False)* 16. _____

17. Parallax can be corrected by: 17. _____
    a. Slightly tipping the taking lens toward the viewfinder just before the picture is taken.
    b. Slightly tipping the taking lens toward the subject just before the picture is taken.
    c. Slightly tipping the subject toward the camera just before the picture is taken.
    d. None of the above.

18. When taking close-up and macro pictures, use a _____ *(small, large)* aperture setting for maximum depth of field. 18. _____

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PHOTO MAGNIFICATION

Activity B
Unit 13

Name _____
Date _____ Period _____

Produce your own examples of close-up photography, photomacrography, and photomicrography and mount them in the space below. (OR look through magazines and newspapers and clip and mount examples of close-up photography, photomacrography, and photomicrography.) Next to each type of photography, describe how the photo was taken (OR how the photo was probably taken).

Close-up photography:

Photomacrography:

Photomicrography:

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MEDICAL AND INDUSTRIAL USES

Activity C
Unit 13

Name _____
Date _____ Period _____

Visit the library. Research close-up photography, photomacrography, and photomicrography. Then write a brief description about the medical and industrial uses of each type of photography.

Close-up photography:

Medical uses - _____

_____

_____

_____

Industrial uses - _____

_____

_____

_____

Photomacrography:

Medical uses - _____

_____

_____

_____

Industrial uses - _____

_____

_____

_____

Photomicrography:

Medical uses - _____

_____

_____

_____

Industrial uses - _____

_____

_____

_____

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14 MOTION PICTURES

CINEMATOGRAPHY

Activity A
Unit 14

Name _____
Date _____ Period _____

Carefully read the unit. Then complete the following statements about motion pictures.

1. The appearance of motion in motion pictures is produced by rapidly projecting a series of still pictures, called _____, on the screen. 1. _____

2. Since the eye retains an image for a fraction of a second, motion pictures blend together and give the impression that the subjects are moving. This retaining power of the eye is known as _____ _____ _____. 2. _____

3. The abbreviation fps refers to _____ _____ _____. 3. _____

4. Normal movement can be simulated by filming and projecting _____ to _____ fps. 4. _____

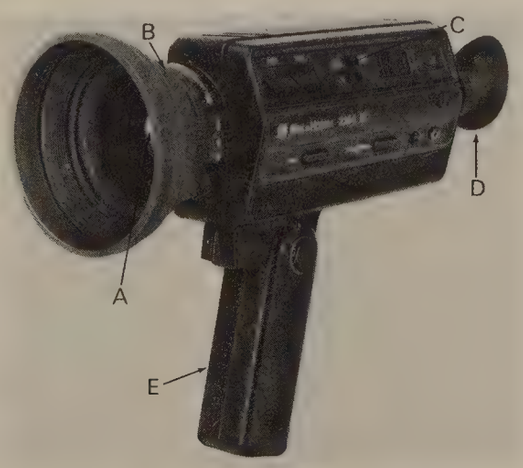
5. _____ *(Slow motion, Speeded up action)* results from speeding up the camera to 64 to 128 fps and projecting the film at normal speed. 5. _____

6. _____ *(Slow motion, Speeded up action)* results by slowing the camera to less than 16 to 24 fps and projecting film at normal speed. 6. _____

7. A person who makes motion pictures is called a _____. 7. _____

8. List five items of equipment that the amateur needs to make and view a motion picture. 8. _____
_____
_____
_____
_____

9. Identify the five main parts indicated on this motion picture camera. 9. A. _____
B. _____
C. _____
D. _____
E. _____



(Continued)

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10. Most modern super 8 and 8 mm cameras are made with fixed focal length lenses. *(True or False)* 10. _____

11. Clear, sharp movies will result only if the lens is properly _____. 11. _____

12. A projector lens is rated by its _____ - _____ and its _____ _____. 12. _____ _____

13. Most modern amateur motion picture cameras use the _____ _____ format motion picture film. 13. _____

14. _____ _____ film is a new type of film that eliminates the need for floodlighting in many situations. 14. _____

15. For best results when making motion pictures, use a mix of short and long scenes. *(True or False)* 15. _____

16. If a scene is too big for one shot, slowly move the camera across the scene. This method is called _____. 16. _____

17. Sound units are designed to be used at no more than _____ feet from the scene. 17. _____

18. The process of removing the defective material and rearranging the remaining scenes into a series of related sequences that will tell an interesting story is called _____. 18. _____

19. To figure out how long your film will run, multiply each foot of film by about _____*(two, five, eight)* seconds. 19. _____

20. A _____ allows you to piece together several scenes in a desired order. 20. _____

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HISTORY OF MOTION PICTURES

Activity B
Unit 14

Name _____
Date _____ Period _____

Visit the library. In the space below, write a brief report on the history of motion pictures.

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MAKING YOUR OWN MOVIE

Activity C
Unit 14

Name _____
Date _____ Period _____

Use techniques described in this unit to make a short movie.

Materials:

Movie camera
Motion picture film

Procedure:

Make a commercial for an item of photography equipment. The edited motion picture should be about 60 seconds in length. Plan your commercial in advance. Be sure to prepare a script. Show the finished movie to your class.

Evaluation:

1. Did the commercial hold your audience's attention? Explain. _____

2. Did the commercial include a mix of long and short scenes? Explain. _____

3. Was the sound level good? Explain. _____

4. Were the scenes in sharp focus? Explain. _____

5. Did the commercial show action? Explain. _____

6. Did the parts of the commercial flow together smoothly? Explain. _____

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15 HOW TO DISPLAY PHOTOGRAPHS

DISPLAYING PHOTOGRAPHS AND SLIDES

Activity A
Unit 15

Name _____
Date _____ Period _____

Carefully read the unit. Then answer the following questions about displaying photographs and slides.

1. Your favorite photograph can be displayed by: 1. _____
   a. Making an enlargement of the photo and mounting it on a stable backing.
   b. Framing the photograph.
   c. Projecting transparencies on a suitable screen.
   d. All of the above.

2. A "custom lab" can make a bad picture into a good one. *(True or False)* 2. _____

3. Select a mounting board which: 3. _____
   a. Is of your favorite color.
   b. Is the most expensive.
   c. Will accent and enhance the colors and mood of the photograph.
   d. None of the above.

4. When dry mounting a photograph with heat, work on a day when humidity is _____ *(low, high)*. This will reduce the chance of the mounting board warping and/or bowing. 4. _____

5. When dry mounting a photograph, the dry mounting tissue should be cut to the exact size of the print. *(True or False)* 5. _____

6. A hot _____ _____ is used to lightly tack the tissue to each corner of the print. 6. _____

7. Photo mounting sprays must be used in a well _____ area. 7. _____

8. When using a spray mounting adhesive, _____ applications are recommended. 8. _____

9. _____ _____ adhesives permit cold mounting a print to a mounting board. 9. _____

(Continued)

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10. _____ mounting with paste or glue is an inexpensive mounting process, but can be messy and time consuming. 10. _____

11. Paste and white glue work well on RC print papers. *(True or False)* 11. _____

12. A technique called _____, surrounds the print with a mounting board apron. This also keeps the print from touching the glass when framed. 12. _____

13. _____ is a popular way to display transparencies. 13. _____

14. To be projected, transparencies must be mounted in cardboard, plastic, or metal and glass frames called _____. 14. _____

15. Slides must be inserted into a projector so the image is upside-down to the operator. *(True or False)* 15. _____

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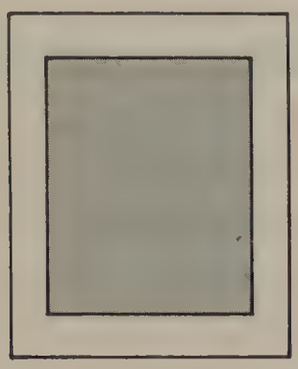
PRINT PLACEMENT

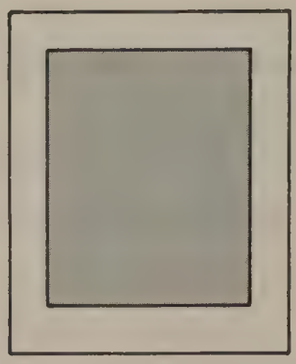
Activity B
Unit 15

Name _____
Date _____ Period _____

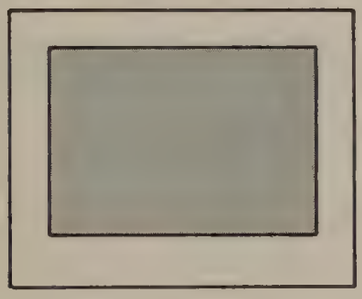
Placement of a print on a mounting board is important. Look at the samples below. Indicate which samples have the best border relationships by writing "preferred" in the blanks. Indicate which border relationships are poor by writing "avoid" in the blanks.



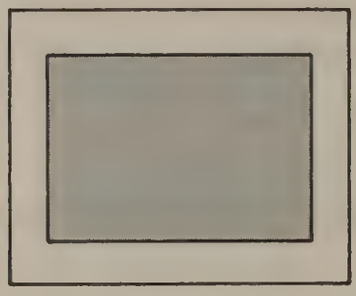
1. _____



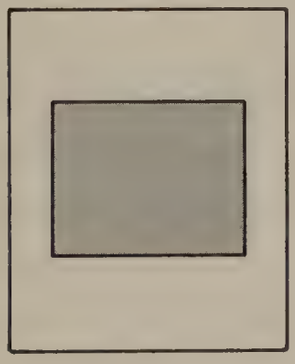
2. _____



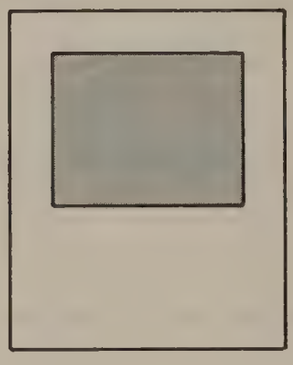
3. _____



4. _____



5. _____



6. _____

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MOUNTING AND MATTING PHOTOGRAPHS

Activity C
Unit 15

Name _____
Date _____ Period _____

Choose two of the best quality photographs you have produced during this course. Following the directions given in Unit 15 of the text, mount one photograph and matte the other. In the space below, evaluate both photo displays. Then submit them both to your instructor.

Mounted Photograph:

1. Does the texture, color, and weight of the mounting board accent and enhance the mood of the photograph?
   Explain. _____
2. Describe the positioning and placement of the photograph on the mounting board. _____
3. Describe the qualities of this photo display. _____
4. Describe any negative aspects of this photo display. _____
5. Describe how this display can be improved. _____

Matted Photograph:

1. Does the texture, color, and weight of the matte board accent and enhance the mood of the photograph?
   Explain. _____
2. Describe the positioning and placement of the photograph. _____
3. Describe the qualities of this photo display. _____
4. Describe any negative aspects of this photo display. _____
5. Describe how this photo display can be improved. _____

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PRESENTING A SLIDE SHOW

Activity D
Unit 15

Name _____
Date _____ Period _____

Develop a short slide show. Answer the following questions about your presentation.

1. Is the presentation well planned and interesting? Explain. _____

_____

2. Are all of the slides of good quality? Explain. _____

_____

3. Are any special techniques used to make the presentation more interesting? If so, describe them. If not, consider them. _____

_____

4. Is the time interval between slides too long, too short, or just right? _____

_____

5. What changes should be made to improve the show? _____

_____

Make any changes that are needed in the presentation. Then show your slide presentation to the class. Following the presentation, ask the class members for comments about the presentation.

List comments from class members below.

_____

_____

_____

_____

_____

_____

In the space below, write a short critique of your slide presentation.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

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ABOVE AND BEYOND

ELECTRONIC PHOTOGRAPHIC MEDIA

Activity A

Name _____

Date _____ Period _____

Interview experts in the field or visit the library to find out more about the principles of computer-generated images or other trends in electronic photographic media. Write a report in the space provided, and present it to the class.

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EXPLORING VIDEO CAMERAS

Activity B

Name _____

Date _____ Period _____

Visit a store that specializes in video cameras. Find out the answers to the following questions.

1. How does a video camera work? _____

2. How does a video camera differ from a super 8 movie camera? _____

3. Why are clarity, color accuracy, and low-light performance important in judging the quality of a video camera?

4. Describe various special features available on video cameras. _____

5. What is the difference between a video camera and a camcorder? _____

6. What is the price range of video cameras? _____

7. Describe the types of activities that you could record with a video camera. _____

8. Explain why you would or would not want to own a video camera. _____

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LEADERSHIP SKILLS/ STARTING A PHOTOGRAPHY CLUB

Activity C

Name _____

Date _____ Period _____

Suppose that since you and several other students have an interest in photography, you have decided to start a photography club at your school. This would be an excellent opportunity for you and the other students to learn more about photography as well as to develop leadership skills that will be valuable to you later in life. Respond to the following questions and statements.

1. How could a leader use each of the following skills to successfully lead a group?

   Create interest: _____

   Involve members: _____

   Use knowledge: _____

   Be organized: _____

   Communicate effectively: _____

   Share responsibility: _____

2. How could being a member or leader of the photography club help you to develop leadership skills?

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3. What would the photography club be called? _____
4. List at least four types of photography-related programs that the photography club could sponsor.

_____

_____

_____

_____

5. List at least three kinds of social events that the photography club could host. _____

_____

_____

_____

6. List two service projects that the photography club could perform. _____

_____

7. What kinds of field trips might be of interest to the photography club? _____

_____

_____

8. What kinds of fund-raising projects could the photography club choose to do to raise money for new equipment, supplies, and club activities? _____

_____

_____

_____

9. How could the photography club advertise meetings and programs? _____

_____

_____

10. What types of awards might be given to recognize outstanding members of the photography club?

_____

_____

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ENTREPRENEURSHIP

Activity D

Name _____

Date _____ Period _____

Complete the following exercise to help you determine whether you would want to accept the challenge of starting your own photography business.

1. Describe your photography skills and the equipment available to you. _____

2. Describe three types of photography that you are interested in doing. _____

3. Briefly describe the market for each type of photography. (Consider potential customers, competition, your sales ability, etc.) _____

4. Based on your market analysis, what type of photography would offer the best opportunity for success? _____

5. How much time would it take you to set up and run a photography business? _____

6. Estimate the expenses that would be involved in setting up your business. (Expenses may include equipment, supplies, transportation, taxes, etc.) _____

7. List three pros and three cons of starting a photography business of your own. _____

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